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THE NATURAL HISTORY MUSEUM
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Journal

2000

March 2001

EDINBURGH NATURAL HISTORY SOCIETY COUNCIL

At 1st January 2000

THE NATURAL HISTORY MUSEUM
-5 APR 2001
PRESENTED
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PRESIDENT'S NOTES

Among the Society's usual multitude of activities in 2000 - winter talks ranging from Whales to Ladybirds and Moths, and excursions which took members from Norham to Aberfeldy and from Wanlockhead to Tentsmuir, together with an extended stay at Kincraig - two events stand out: the Millennium Dinner and Mary Clarkson's retiral as Secretary.

You will read elsewhere in the Journal of the Dinner, so ably organised chiefly by Eunice Smith. Suffice it to say here that despite the absence of any obvious excuse to hold another dinner in the future - it is 19 years to the Society's 150th anniversary - there was an immediate and widespread demand that another such occasion must be organised quite soon.

Over an extended period the Society has been extremely fortunate in its secretaries, looking no further back than the years when first Connie Stewart and then Ena Gillespie held the post. Mary was a most worthy successor. We will remember alike her efficiency and thoroughness, and perhaps most of all the example she set of making everyone welcome to the Society's activities. Our thanks to Mary.

Our thanks also to Sandra Stewart and Lyn Blades who have put together another first-class edition of the Journal. I hope you all enjoy reading it.

MUNRO DUNN

OBITUARIES

ARTHUR SMITH

Although a dedicated ornithologist, Arthur Smith was a great all-round naturalist with an interest in plants and animals. He was a long-standing member on the Edinburgh Natural History Society and for many years led an annual outing, often jointly with the Tweed Valley Branch of the SWT, of which he was a founder member. He was also chairman for 16 years form its inception of the Central Borders Support Group in Galashiels.

MISS K. P. WILSON

Pat died on 31st October after a short illness.

Pat joined the Society in the late 1950s and became Minutes Secretary in 1961 until 1979. She wrote up the Minutes for the Council and indoor Meetings for nearly 20 years.

She enjoyed excursions, by private bus driven by a member for Hunter's, by public bus or by train. Few members had cars then. Visits were made to Speyside, Arnside, Ben More and Crinan, and many more local destinations. On one memorable occasion Pat was marooned on Scaba, while searching for the Corrievrechan. She was collected later by the local shepherd.

Pat taught at James Gillespie's School for many years, and to escape the city and school, she had a cottage at Freuchie in Fife. She had a great sense of humour and an enquiring mind; members enjoyed her company, in times past.

MRS HARPER

Hettie Harper was a member for many years and along with her husband, Bill, was a frequent attender at Winter Meetings. Her particular interest was ornithology. Ill health steadily reduced her activities, but she continued to come to the annual Wine and Cheese Party until quite recently, where she met many of her old friends.

RITA BRADY

Rita was a very faithful attender at outings for many years, enjoying the company and always showing a keen interest in the botany.

EDINBURGH NATURAL HISTORY SOCIETY LIBRARY

The library is now permanently ensconced in the Church Hall of St. Ninian's Church in Corstorphine. The hall is best approached from the back of the church in St. Ninian's Road. There are two churches next door to each other: St.Ninian's is on the east side of the Catholic church.

Joyce and Robin Marks, librarians, are happy to open up the library to members. The most suitable time is any Tuesday morning between 10 am and 12 noon when the playgroup is in operation and the west entrance is unlocked. Please phone 0131 334 5501 and you will be met there. Other mornings can be arranged but not Wednesday morning, when Mr Thomson, Church Officer, will not be there and access could be difficult. Especially convenient for Joyce and Robin is the Tuesday morning before a Wednesday meeting (i.e. the last Tuesday in the month) as they will be at the library choosing books to be on display at the meeting.

We have some new books, bought with Jackie Muscott's advice, and the Council is hoping to consult some experts on further additions. Any suggestion from members will be welcome also.

Recent acquisitions include:

New Flora of the British Isles	Clive Stace
Field Flora of the British Isles	Clive Stace
Fungi of Northern Europe - Hygrocybe	D. Boertmann
- Lactarius	J.Heilmann-Clausen, A. Verbeken, J.Vesterholt
The Wild Flowers of the British Isles	David Streeter illus. by I. Garrard,
Scottish Hill Tracks	Scottish Rights of Way Society
Wild Orchids of Scotland	Allan, Woods and Clarke
The Liverwort Flora of the British Isles	Jean A Paton

ROBIN AND JOYCE MARKS

SOCIETY EQUIPMENT

In addition to books held in the Library, the Society has various other items which can be borrowed by members for their private use, including LP records of birdsong with accompanying booklet, and a recording of Grasshoppers. Needless to say, members will be responsible for the care of books and equipment on loan.

Telescope:	A Bushnell Spacemaster of 20x-40x magnification, in carrying case and a car window mount for in-car use. *Apply to Miss Molly Woolgar (Tel. 0131 667 2688)*
Microscopes:	A number of high and low power microscopes. *Apply to Miss Margaret Perry (Tel. 0131 447 3515)*
pH Meter:	For measuring the alkalinity/acidity of soil or water. *Apply to Mrs Elizabeth Farquharson (Tel. 0131 447 1994)*
Mammal Traps:	Twenty-four small mammal traps. *Apply to Mrs Elizabeth Farquharson (Tel. 0131 447 1994)*
Photographic slides:	A comprehensive slide collection left to the Society by Miss Janet Raeburn. The subjects are mostly botanical but also include birds, mammals, butterflies and Scottish scenery. They are kept in the Library.
Bawsinch Key:	The Bawsinch Nature Reserve at Duddingston is managed by the SWT, who allow the Society to hold a key for members to have access to the hide overlooking Duddingston Loch. *Apply to Mr Jim Stewart (Tel. 0131 447 4210)*
Computer Scanner:	If you would like anything scanned - *Apply to Sandra Stewart (Tel:0131 441 2641)*

LADYBIRDS - CAN YOU SPOT THEM?

BY IRENE E. GEOGHEGAN

People's lives would be very different without the benefits provided by insects, and it is unlikely that we would survive on earth without them. We would know much less about genetics and other areas of biology. And we would not be inspired or fascinated by the diversity and habits of beneficial insects, especially the loveable ladybird.

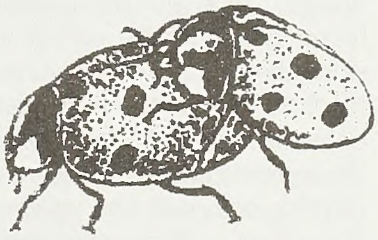
It is important that people are aware of and understand the interaction of living things with their environment. Therefore I have for the last 4 years, as a research scientist, gone out into the community to teach and encourage children and adults to gain a deeper knowledge of the world around them by learning about the Seven Spot ladybird (*Coccinella septempunctata*). The general public's interest in the environment has greatly heightened in the last few years because of the media involvement over the pros and cons of growing genetically modified plants versus organic versus normal farm practice. Ladybirds play a central role in these issues. So with the help of the ladybird I provide hands-on direct contact activities and am able to arouse curiosity, generate enthusiasm, create a lasting impression and dispel myths.

Ladybirds belong to the family of beetles called *Coccinellidae*, from the Latin coccinatus, meaning 'clad in scarlet'. There are probably over 4,500 species found worldwide, but only 42 resident species in Britain. Of these, 18 are small, either brown or black in colour, without any bright markings, so are not generally recognised as ladybirds. The name 'ladybird' is itself derived from the commonest and most abundant of the British species, the Seven Spot (*Coccinella septempunctata*). The lady in question is Our Lady, the Virgin Mary. The red colour is thought to represent her cloak, which in old pictures and sculptures was traditionally red, and the seven spots are the Virgin's seven joys and seven sorrows. In some parts of Scotland, ladybirds are still called ladyclocks, the clock being thought to be a corruption of cloak.

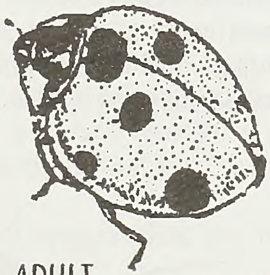
Ladybirds show a complete metamorphosis, passing through three main stages — egg, larva and pupa, before reaching adult. This whole cycle can be completed in four to five weeks.

Medieval Europeans believed ladybirds were sent from heaven to save their crops. Why? Because both Seven Spot larvae and adults are voracious eaters, consuming vast amounts of aphids, which cause significant losses to crop production and compete with humans for food. Applying chemical insecticides is a common practice to control pest populations, but this in the long term will significantly pollute the environment. The literature on pesticide side effects on arthropod natural enemies has greatly expanded over the years, hence, projects studying the interactions between ladybirds and aphids could result in important information in terms of biological control, reducing the need for insecticides and reducing the cost of crop production. Also, because of the distribution and abundance of ladybirds in non-crop habitats it makes them ideal for use in ecological and population dynamic studies.

Most insects and many insect eggs are host to one or more species of parasitic wasps. Often tiny and delicate, these parasitic wasps infect their host insect by laying eggs inside them. The egg hatches inside the host and the resultant larva feed on it, eventually causing death. Aphids are commonly parasitised; therefore normally parasitic wasps are considered extremely effective biological control agents. Unfortunately not all parasitic wasps are beneficial. In Britain, a small braconid wasp, *Dinocampus coccinellae*, parasitises a wide range of ladybird species. In Scotland, the most commonly attacked species is the Seven Spot and infestation levels in some regions are >60% (Geoghegan et al., 1997). Studies on both the infestation levels of this wasp and interactions between wasp and ladybird can explain how different parasitoids can be either beneficial or destructive to our environment.



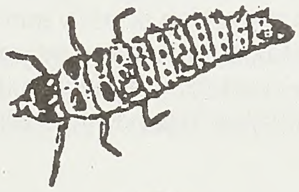
MATING



ADULT

About 50 EGGS
Hatch in 4-5 days

PUPA stage
lasts for 1-3 weeks



LARVA
3-6 weeks eating aphids

THE SCOTTISH SEVEN SPOT LADYBIRD SURVEY

This survey had two main aims. One was to build community partnerships through science and to enable the community to share in shaping the science projects in which they were involved. The second was to provide important and essential information about the location and frequency of this wasp in Scotland. From the alarming results of the research into the parasitism of the Seven Spot ladybirds around the Dundee area of Scotland, it was important to establish what was happening throughout Scotland.

Securing this data was essential if ways of reducing the wasp's attack efficiency against beneficial ladybirds were to be developed. It was therefore necessary to have a formidable team of ladybird enthusiasts to collect specimens. Children and adults alike became interested and were sent information packs. These packs included notes on ladybird identification, interesting scientific facts and even poetry and funny stories pertaining to ladybirds. The response was significant and over 2,500 Seven Spot ladybirds were sent in for examination. Each record was checked in a number of ways including cross-checking grid references with descriptive locations and following up any unusual observations. The survey itself was only a part of the project; the rest of the work encompassed many different scientific regimes.

LADYBIRDS

During late spring and early summer, Seven Spot ladybirds can be found in the wild, and aphids can easily be obtained to feed them. They are between 5.5 and 7.5mm long, have an oval black plate covering the neck with white flash on the shoulder, and the wingcases are red with seven black spots. Ladybirds are most active in sunshine and mating pairs are a common sight in suitable habitats. Once mated the female ladybird can lay up to 50 tiny oval yellow eggs in clumps. After four to five days, the eggs hatch into larvae that are dark coloured with orange, blue and black patches. The larvae spend three to six weeks eating aphids, shedding their skins three times before turning into pupae, which are black to combinations of black and yellow. Usually between one and three weeks later the adult insect emerges from the pupa. At first the wingcases (elytra) are soft and yellow or orange in colour and unspotted. The elytra and the wings expand and harden within the first hour or so, and the bright pigments of the normal pattern are laid down over the next day or two.

The Seven Spot ladybirds only have one generation a year, eggs being laid in the spring or early summer, after which the adults die to be replaced a few weeks later by a new generation of adults. In the wild these new adults will find suitable sites to survive the winter.

APHIDS

Most of the British ladybirds are carnivorous and aphids are the normal diet in the wild. More than 4,000 species of aphids have been identified in the world. However, 30 of our known British species, which are pests of a wide range of arable crops, have been estimated to be capable of causing economic losses in excess of £100 million a year to British agriculture as a result of direct feeding and the viruses that they spread.

Aphids are small, soft-bodied, pear-shaped insects with long legs, antennae, two 'tailpipes' sticking out their rear end and a straw mouthpart adapted for extracting plant juices. The larger species are about half the size of a sesame seed and the smaller are about the size of a poppy seed. They range in colour from light green to nearly black and may have winged or nonwinged forms present in a colony. Most of the reproduction is asexual, with females giving live birth to the nymphs. It is estimated that as many as 600 billion aphids are born every nine generations.

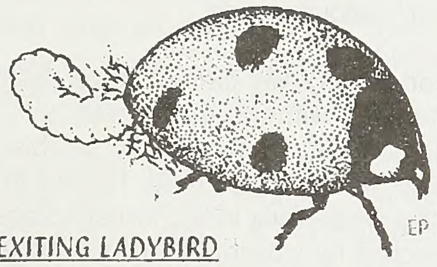
PARASITOIDS

Godfray, 1994 showed that parasitoids provide marvellous systems for investigating outstanding problems in behavioural and evolutionary ecology, and that fundamental research can illuminate many aspects of parasitoid biology that are important to scientists. Many are useful in integrated pest management systems, however the species which attacks ladybirds, is extremely detrimental to biological control. It is a parasite that utilises its host during its development and eventually kills the host. This parasite of ladybirds is a hymenopterous insect of the family Braconidae, subfamily Euphorinae, and known scientifically as _Dinocampus coccinellae_.

The most detailed and useful study of the anatomy and biology of the parasite is that of Balduf, (1926). It is a solitary endoparasite, utilising mainly adult coccinellids. Female wasps show thelytokous parthenogenesis, laying unfertilised eggs, which almost always give rise to female progeny. However, males do occur very rarely. The life cycle can be divided into four stages; egg, larva, pupa, and adult; in other words, the wasp belongs to the holometabolous insect orders. The wasp locates a ladybird and with a highly specialised ovipositor lays a single, rather elongate egg inside it, but several wasps may lay in the same ladybird.

However the nutrients in a ladybird will only sustain one wasp larva. Consequently, the wasp larvae are armed with huge jaws with which the first to hatch destroys its competitors. While the wasp larva hijacks nutrients from her host, she is careful not to kill it. When the larva has passed through four larval stages she severs the main nerves to the legs of her host, effectively paralysing the ladybird. She then burrows out headfirst through the body wall and makes a silken cocoon between the ladybird's legs.

Here she is protected from predators by the ladybird's bright warning coloration and foul tasting yellow fluid until she emerges. She exits from the pointed end of the cocoon.



WASP LARVA EXITING LADYBIRD

First indications are a small puncture. Then the wasp's mandibles become visible, and are used like a pair of scissors to cut around the end of the cocoon, leaving only a small area attached. The end is then pushed back, as the wasp exits headfirst. Once out of the cocoon the wasp dries her wings and is ready within an hour to attack her next ladybird victim. The wasp is fully mature and will search for a ladybird to oviposit into as soon as its wings are dry. In Britain, in May and June the egg takes five to seven days to hatch, the larva develops in 18-27 days, and the cocoon stage lasts from six to nine days. Differences do occur in development rate and these mainly depend on temperature, parasitoid life cycle and population size. Finally the poor ladybird, which has remained alive throughout this terrible ordeal now dies, either through starvation or a fungal infection.

SUMMARY

The environment provides a powerful learning medium, especially since all living things depend on their environment for survival. The use of a popular insect like the Seven Spot ladybird as teaching material, makes it possible for people to acquire, interpret and use evidence and information to discover or re-discover more about the world they live in.

The value of this work can be extremely important scientifically. Our studies involving the public have, we believe, altered people's perceptions of science; many people are now more aware of ladybirds, their life cycle, their needs and their value in pest control. The survey has also had an important role in education.

Over the last year I have given talks to numerous different organisations and schools, and it has given me great pleasure to receive back many many letters, pictures and storybooks thanking me and telling me how I have kindled their interest in biology; I believe our survey has truly made youngsters more aware and caring about the natural world around them, so that future generations can use their responsibility to our environment more wisely.

Finally, a video (**Ladybird Spot-Checks**) has been produced by, and is available from the Scottish Crop Research Institute. Hopefully through my work I have been able to give people a better insight into our wonderful, loveable spotty creatures.

References:

Balduf, W.V. (1926) **The bionomics of *Dinocampus coccinellae* Shrank**. *Annals of the Entomological Society of America* 19:465-489.

Geoghegan, I.E., Thomas, W.P. and Majerus, M.E.N. (1997) **Notes on the coccinellid parasitoid *Dinocampus coccinellae* (Shrank) (Hymenoptera: Braconidae) in Scotland.** *The Entomologist* 116(3): 179-184.

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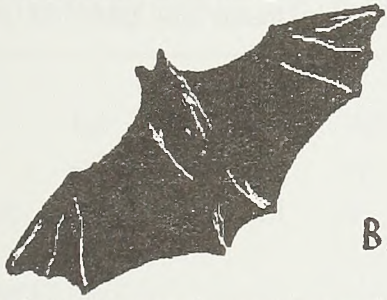
IRENE GEOGHEGAN



BATS at the WINDOW

Late last summer I spent a couple of nights at a guesthouse in the Kingussie area. When I'm away from home I usually leave the curtains open (so that I'm up in time for breakfast). So when I woke up in the early hours I could see that dawn was just beginning to break, and the darkness was dissolving into a beautiful silvery light. I lay admiring it for a time, gradually becoming aware of movement outside. At first I thought a bird or two had passed the window, but then I realised the black shapes constantly flitting by were bats.

Fortunately I had not been reading too many Dracula stories recently.

I watched for about half an hour as the light gradually increased and the movement came to an end; then I turned over and went back to sleep. Presumably the bats were returning to their roosts in the roof after a night's foraging. I don't know what sort they were, only that it was a quite magical experience.

J MUSCOTT

BUTTERFLY CONSERVATION at HOME

The presence of colourful butterflies flitting around the flower beds in gardens is a sight most people find enjoyable and a little uplifting. [Maybe if the butterflies are white and they are in the cabbage patch we are less appreciative, but even then one finds it difficult to be totally antagonistic to them.] To help maintain and propagate such scenes, much has been written in the last decade on butterfly-friendly gardening. This literature has mainly concentrated on the most suitable species of flowering plants that will lure butterflies into the garden. Advice on this can be obtained from Butterfly Conservation.

The conical flower-spikes of Lilac and Buddleia are greatly favoured by the nymphalid butterflies like Peacocks, Red Admirals and Small Tortoiseshells (or King Georges). Michaelmas Daisies are equally attractive. The late summer of 2000 experienced a Hummingbird Hawkmoth invasion and most stands of Red Valerian proved irresistible to them. Nicotiana (Tobacco) and Honeysuckle are close contenders.

However, a great many of these butterflies and hawkmoths visiting our gardens are migrants. They spent their caterpillar-days in Southern Europe or even North Africa. When they matured some unknown impulse sent them in search of pastures new and many chose a single ticket to our northern climes! Some of the Small Tortoiseshells are home-grown but most of these gaudy beasties are transitory visitors. Few of the Peacocks and Red Admirals seem able to survive the winter. Our resident stocks of Small Tortoiseshells seem to have dwindled considerably in the last few years. How can we help them build up again and thus ensure a good butterfly presence even in years of poor migration?

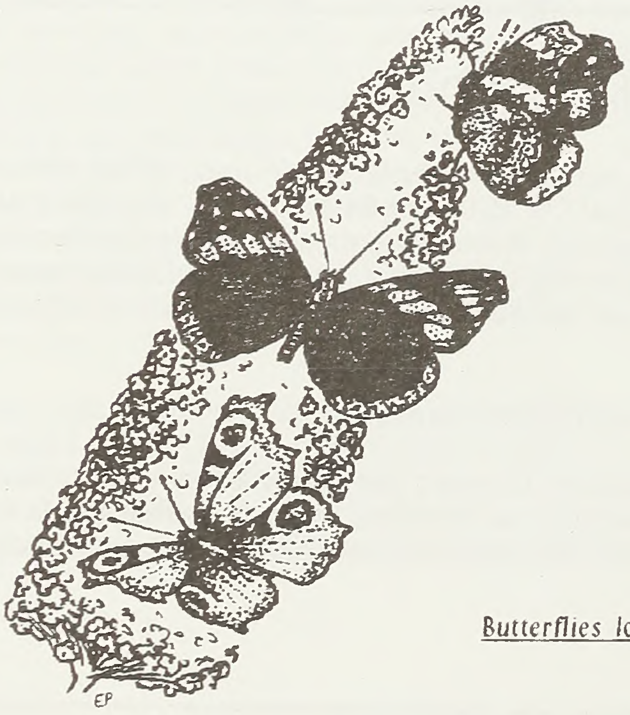
Yes, nectar sources to nourish the adults are important, but there are several other ways we can help them. Most of a butterfly's feeding and growing occurs in the larval stages, thus without suitable larval food plants, this cannot happen. The larvae of most nymphalid butterflies feed either on Nettles or Thistles. In our urge to tidy up the countryside and our gardens, these are just the sorts of plants we try to eliminate. There are statutes which require farmers to control these 'noxious weeds'.

Unfortunately we cannot have resident nymphalid butterflies without these weeds. This apparent impasse is at least partially soluble. If sufficient people grew Nettles and/or Thistles in large plant pots or tubs where their indiscriminate propagation could be controlled by judicious pruning, some progress could be made without compromising agricultural land use.

Most nymphalid butterflies hibernate over winter as adults. They search out undisturbed corners in outbuildings, attics and hollow trees. Are we always as considerate as we could be towards these hibernating butterflies? If they are disturbed during winter they often find it difficult to settle down again and go into torpor. Do we have to spring clean the attic during winter? - could it not be left till summer? Do we have to wash the curtains in the unheated spare bedroom in winter? They would dry better if left until summer. Do we need to white-wash the ceiling of the woodshed or byre this winter? - it could be left until summer.....

I hope these few comments have shown that with a little thought there are things we can do that will help reverse the decline of our resident nymphalid butterflies and help make our gardens brighter places.

KEITH BLAND



Butterflies love the conical flower spikes of BUDDLEIA

RAINFALL AT CORSTORPHINE
for the YEAR 2000
A NEW RECORD

The main weather feature of 2000 locally was the persistence of cyclonic conditions over much of the second half of the year. This produced above average rainfall month after month, which together with the flood-producing downpours of late April resulted in the highest annual rainfall total at the station at Hillview Road, Corstorphine since records started in 1966. This total of 906mm. compares with the previous highest of 894mm. recorded in 1998.

After an average January (despite a 13-day run of dry days in the second half of the month, the longest January dry spell of the 35 years), a wet February was balanced by a March when rainfall was 60% below normal. In contrast, April, normally the driest month, and never in over 30 years reaching 100mm., yielded 145mm. chiefly because of a fall of 74mm. on 25th and 26th April which resulted in flooding in parts of the city. This excess was only partly compensated for by a virtually dry first half of May, and June also was drier than average.

Mid-July, like January, included a 13-day dry spell, but 4 wet days which yielded 90% of the month's rain resulted in an above average total for that month. Indeed, late July saw the start of an unusually high incidence of thundery downpours. Such conditions resulted in rainfall in August two-thirds above average.

As reported recently by the Meteorological Office, over Scotland in general the average atmospheric pressure for the three autumn months, September to November, was the lowest over the 130-year record. As a result the rainfall was above average in October, and well above average in both September and November. The November total was contributed to by the year's second exceptional fall, 56mm. centred on the 6th. Fortunately rivers in Edinburgh remained just below flood levels.

The almost non-stop conveyor belt of depressions was at last interrupted in mid-December. December's total was still above average, but less so than that of any other month in the second half of the year.

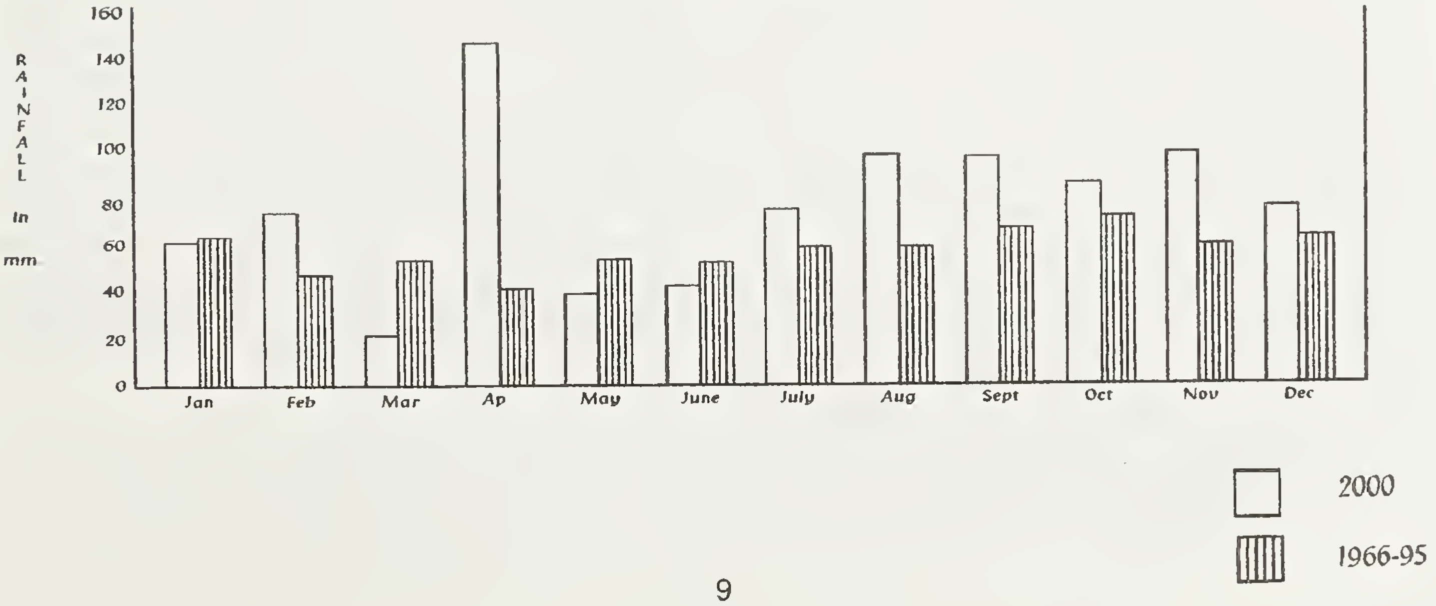
The record rainfall of 2000 was not just the result of an unusual number of heavy downpours. The number of days on which significant rain was recorded was also very high, viz. 218 days, the third highest of the 35 year run. This fell well short of the 1998 tally when slightly lower rainfall was spread over 244 days. Measurable falls were also recorded on 225 days in 1999, as compared with the 1966-95 average of 183 days. It is noteworthy that these three highest counts have occurred in the last three years.

MUNRO DUNN

COMPARISON of RAINFALL in 2000 with AVERAGE for 1966-95

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	TOTAL
2000	61	73	21	145	39	42	74	97	96	85	98	75	906.
1966-95	63	47	53	41	53	52	58	58	66	71	59	62	683

mm



BIOLOGICAL EVENTS in an EAST LOTHIAN GARDEN

It being known that records of flowering have been taken, for the last 24 years, of 600 or more plant species/cultivars growing at my home between Prestonpans and Longniddry I am repeatedly asked if I have any indications of the influence of climate change attributable to atmospheric loads of greenhouse gases. Although detailed analyses of the accumulated data - there are gaps for only 3 weeks - have not been made, I believe that the short answer will prove to be 'no'.

My interest in the study of phenology - the study of the times of recurring natural phenomena - goes back more than fifty years when I had the good luck at Rothamsted Experimental Station to come under the influence of two very distinguished scientists - Dr F J Richards (plant physiologist) and Dr C B Williams (entomologist). For most of their working careers they would be considered, in modern parlance, to be 'reductionists' but unlike most reductionists they espoused the cause of monitoring by recording the performance of plants and animals; they learnt about the world around them and, in so doing, identified problems of fundamental importance worthy of investigation. My own interest in phenology remained largely quiescent until 1977 but since that time I have come to recognize what held the attention of Drs Richards and Williams.

To cut a long story short I spend 11/2 hours every weekend recording flowering - in my absence my late father and my wife Pauline stood in for me. At the beginning of this exercise we very quickly realised that we had to have a definition of flowering that we all could accept. We determined that a plant would be regarded as in flower if at least one flower was open, and a flower was open if its stamens and/or stigmas could be seen without pushing its petals aside. A second decision was taken: we wouldn't summarize our data until we judged that we had sufficient to detect long term changes. We took this decision to avoid bias - had we had a precise knowledge of the average first dates of flowering we might have been tempted to intensify our search accordingly.

Now, after 24 years, pressures are beginning to build - we have succumbed partly because of the enthusiasm of Scottish Natural Heritage which sees that the data might be of value in relation to its own concern for British natives, 30-40 of which have been included in our records. As yet we have made only a few very preliminary analyses but already it is clear that the 'noise' from seasonal differences is very likely to totally swamp longterm changes attributable to global warming. At the start it is necessary to recognize that among plants coming into flower during the first six months of the year there are two groups that I refer to as 'responsives' and 'non responsives'. In the latter group, including Apple and Honesty, the onset of flowering seems to be overridingly determined by day length whereas in the 'responsives' the onset varies with the weather in which temperature seems, in our conditions, to be the dominant attribute. If I were to challenge my readers to give an estimate of the extent of seasonal changes I wonder how many would be anywhere near correct - I certainly wouldn't have been 24 years ago.

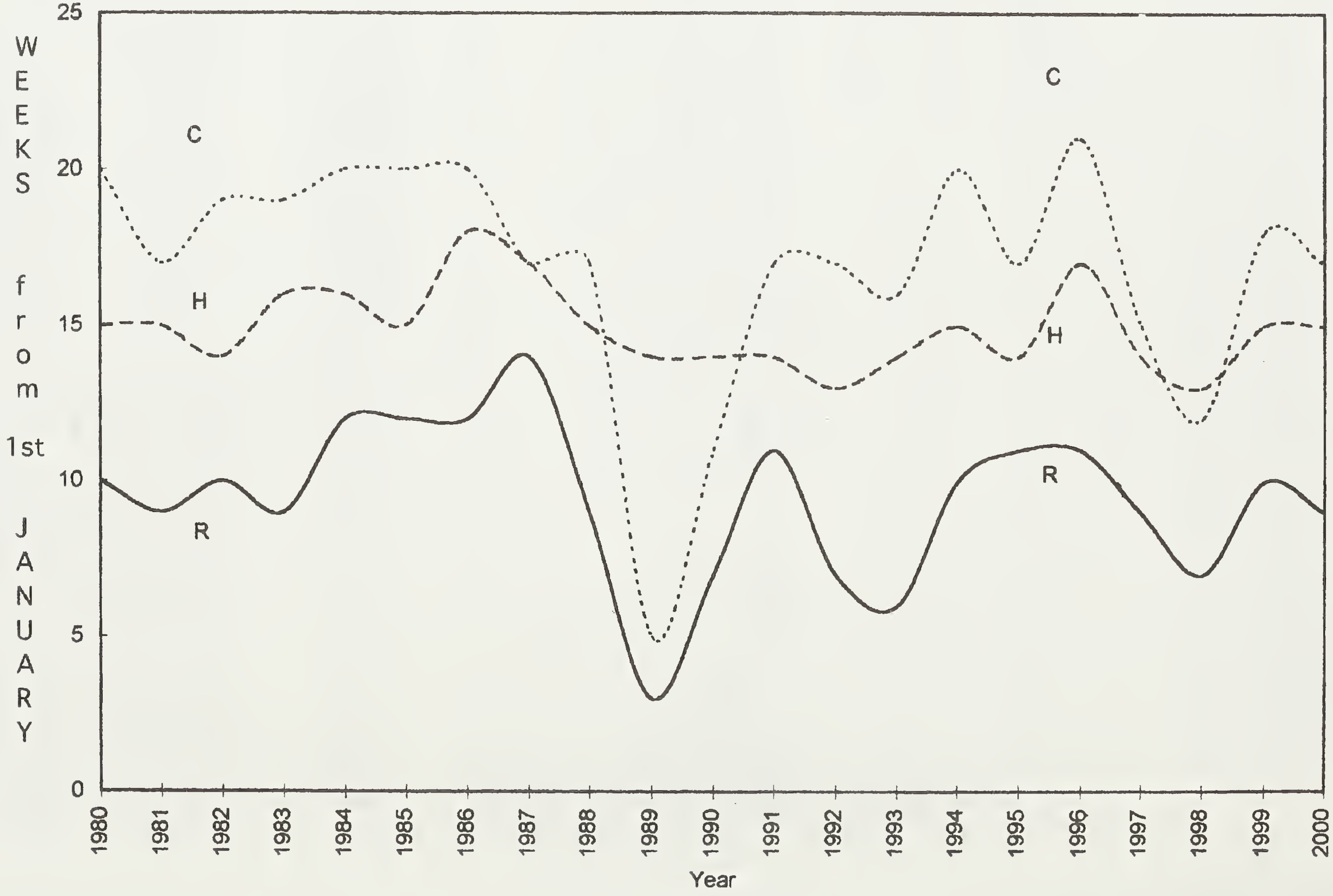
With my friend and colleague Professor Desmond Patterson, an examination of the data for Honesty (H), Rhododendron 'Praecox' (R) and Mexican Orange (*Choisya ternata*) (C) has been made (Fig. 1). From 1980 to 2000 the first dates of flowering of R and C have varied by more than 10 weeks: in other species there have been even larger variations reaching 26 weeks in the case of the Poached Egg Plant (*Limnanthes douglasii*). Not surprisingly when the data for R, C and H were subject to searching statistical analyses, there were absolutely no signs of statistically significant long-term trends. We tend to talk with great confidence about seasonal differences - this or that plant is flowering much earlier now than 20 years ago - but I have come to recognize that my own memory, even allowing for my age, is very short-lived. As a result I have a healthy disregard for unsubstantiated assertions about flowering.

When the data for Honesty (H), Rhododendron 'Praecox' (R) and Mexican Orange (C) plus those for Grape Hyacinth (G) and Skimmia (S) are considered more searchingly it becomes apparent that some responsive plants are much more responsive than others and as a result the sequences of plants coming into flower can change dramatically from season to season (Fig. 2). As a result of the mild conditions that prevailed between Dec. '88 and March '89 R, C, G and S started to flower within 3 weeks of each other and at least 8 weeks before H. In average years they all still start to flower before H but there is a much greater spread within the group of responsives - 7 weeks. In a late year only R and G start to flower, at the most 3 weeks, before H while S and C commence after it.

Other differences have been detected. In addition to its onset of flowering being relatively unvarying, the duration of flowering in Honesty remains more or less 18 weeks - the same also applies to apple. However while the onset of flowering of the responsive Rhododendron 'Praecox' may be advanced in mild conditions its duration remains unchanged. This picture contrasts with that for Grape Hyacinth, Doronicum and Mexican Orange for which the duration of flowering is lengthened. For example with Mexican Orange, its average flowering duration of about 10 weeks was extended in 1989 to 23 weeks, the difference of 13 weeks corresponding to the earlier onset of flowering.

In time it should be possible to conjecture the effects of 1°C, 2°C... increases in temperature, 1, 2 or more months before the onset of flowering but allowances will have to be made for some woody plants. For

Fig.1. *First dates of flowering in an East Lothian garden of Honesty (Lunaria annua) (H), Mexican orange (Choisya ternata) (C) and Rhododendron 'Praecox' (R) between 1980 and 2000*.



example in responding to the mild period from Dec. '88 - March '89, some Rose species and hybrids started to flower significantly sooner in 1990 than in 1989 but thereafter reverted to the 'norm'. As the hybrids were pruned back to 18cm in Nov. 1989, I wonder if their roots or rootstocks perceive the effects of weather and have a greater influence on flowering than is generally assumed?

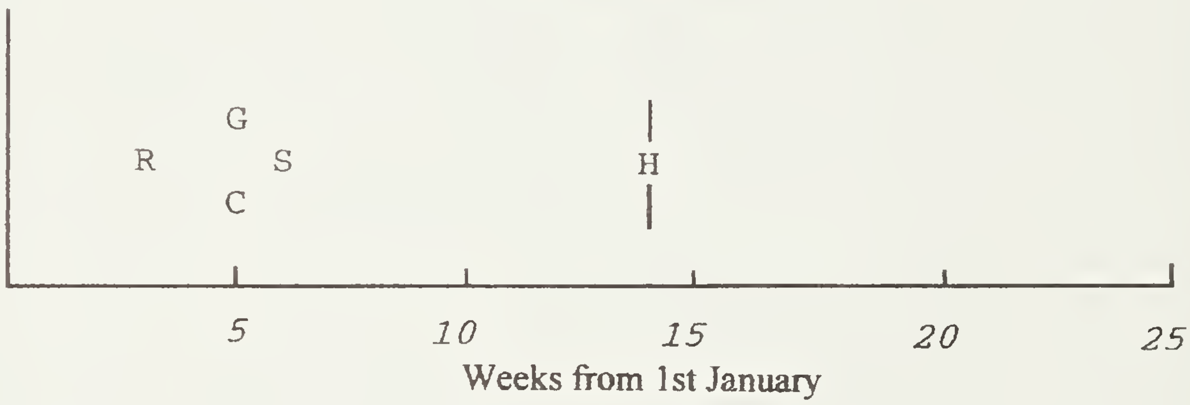
Elsewhere, my former colleagues have put in place a scheme to monitor the performance of butterflies - it will be interesting to learn if they and their preferred plants respond synchronously.

For my own part I have been more concerned with the biology of mycorrhizal fungi which play an increasingly recognised role in plant water and nutrient uptake. With Professor Roy Watling, I have recently identified in association with _Eucalyptus gunnii_ the basidiomes of a mycorrhizal fungus usually only found in warmer regions of the world. The fungus in question, _Laccaria fraterna_ is, from subsequent observations, clearly widespread (in association with eucalypts) in Edinburgh and East Lothian. As it was first recorded in 1997 - the least cold summer of the twentieth century - might its occurrence be a reflection of climatic change? Could it be an indicator?

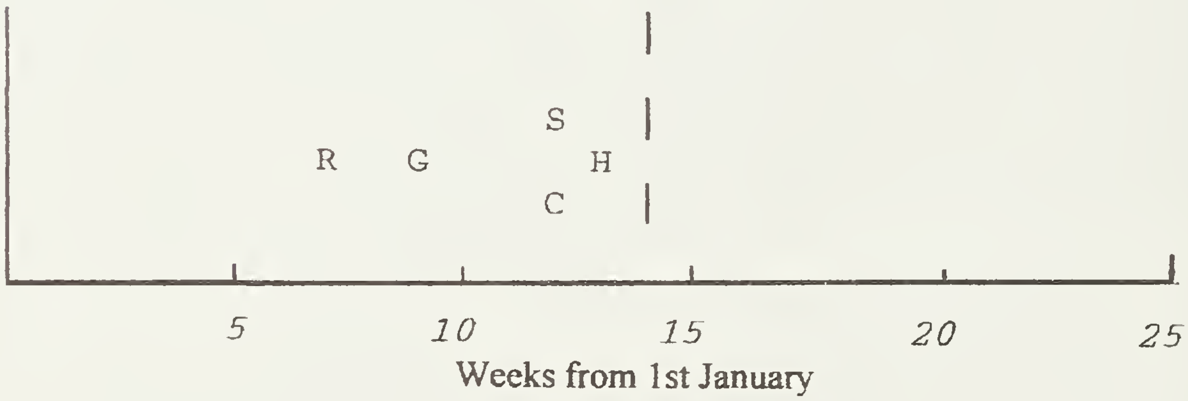
FREDERICK LAST

**Fig. 2** Sequences of flowering in an East Lothian garden of Grape Hyacinth (Muscari neglectum) (G), Honesty (H), Mexican Orange (C), Rhododendron ' Praecox' (R) and Skimmia japonica (S) in early, average and late years.

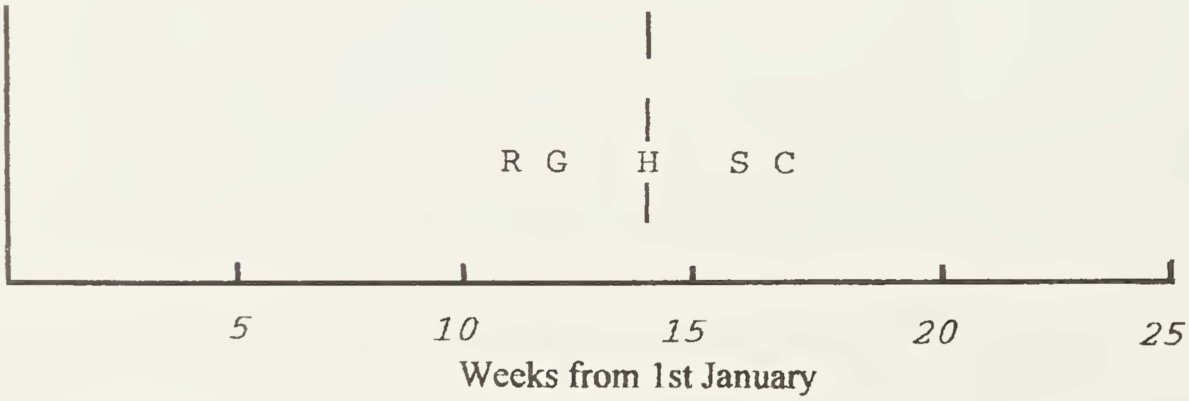
(a) Early Year



(b) Average Year



(c) Late Year

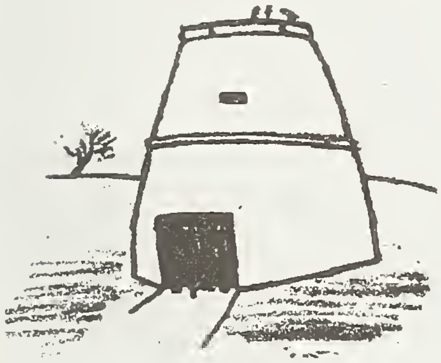


ADOPT A MONUMENT?

*'**Adopt a monument**' exhort the leaflets on display in libraries and other public places around the city. 'Edinburgh is full of noteworthy monuments and sculpture....'. The suggestion was interesting and perhaps caught the attention of other members also; but what is involved? Not a lot, it appears. 'Keep an eye on monuments and report any problems [to the authorities] at an early stage.' The remainder of the requirement can be summarised as researching the lesser-known monuments and publicising them in any way appropriate.*

Is this something the Natural History Society might become involved in, I wondered. At that point I envisaged any NATS interest being in statues or plaques relating to notable natural historians. Searching through the list of adoptable monuments, however, none seems to fit this specification. Has Edinburgh in the past not been home to leading naturalists? Or have they not been thought to have the status to warrant commemoration? Or are there memorials on private property? Or simply overgrown and forgotten about?

Those on the adoption list which suggest themselves for consideration comprise only the Meadows whalebone arch and various doocots. Elizabeth Farquharson has already explained the cultural significance of whalebone arches and how one came to be placed beside the Meadows in the 1995 edition of the Journal.



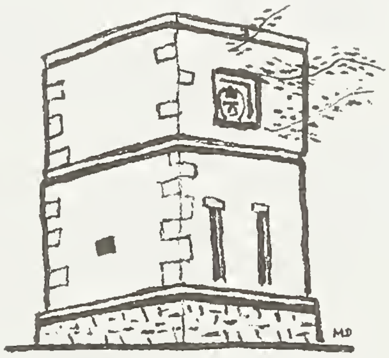
LOCHEND CASTLE DOOCOT

Doocots were intended to vary the winter diet of estate-owning families. Three in the City council's care are listed for adoption. One, formerly attached to Drylaw House, is of the lectern type. It is on waste ground just behind housing on Ferry Road, and is very necessarily fenced off, being in ruinous condition despite its 'B' listing. Lochend Castle Doocot, also 'B' listed, was erected by the Logans of Restalrig in the 16th century, although it was subsequently modified. It is of the beehive type, and it is in Lochend Park, a well-tended but unexciting location. It looks reasonably sound and is indeed occupied.

Redhall House Doocot is of an unusual hexagonal design. It dates from 1756 but incorporates a 16th century armorial panel. It too has been modified and is not entirely sound, in particular lacking a roof. It is in a wonderfully commanding situation at the top of a steep bank above the Water of Leith.

What do members think? Should the NATS Council consider adopting any of these monuments? Suggestions to any Council member please.

MUNRO DUNN



REDHALL HOUSE DOOCOT

ANOTHER FIELD of BLUE

Last year we wrote 'The Drooping flower heads give the Borage fields a lovely lilac colour pleasing to the eye after the harsh yellow of the Rape fields.' This year another unusual crop which produces colourful blue fields was seen in both Fife and East Lothian. This was Phacelia (*Phacelia tanacetifolia*) which is an introduction from Western North America. It is a fast-growing, hairy annual which has blue flowers in branched coiled spikes (like *Myosotis*) with prominently protruding stamens. It is spring sown and ploughed in as a green manure in autumn.

LYN BLADES

THE SCOTTISH SEABIRD CENTRE

THE FIRST YEAR

A carnival atmosphere reigned in North Berwick as the town welcomed Prince Charles on Sunday, 21st May 2000 for the official opening of the Scottish Seabird Centre. He toured the landmark building and viewed the exhibition areas, auditorium, cafe/restaurant and gift shop. He was the first to use the technology at the Centre to rotate, pan and zoom the remote control camera on the Bass Rock lighthouse to view the nesting Gannets and he tested the telescopes on the viewing deck.

The first Gannet chick on the Bass Rock was spotted on camera within two weeks of the opening of the Centre; thereafter there was a population boom on the Rock. The chicks grew at an amazing rate and within no time every available inch of the Rock was crammed with white fluffy Gannets which in time were seen to evolve into sleek juveniles.

The adult Gannets were no less fascinating. Unaware of the prying eyes of the audience in the Centre, adult Gannets were caught on camera, stealing bedding material from their neighbours, scrapping, squabbling and fighting. Visitors were guaranteed the full gamut of Gannet behaviour, from bill-fencing-greeting between adult Gannets - to sky pointing - a Gannet's non-verbal communication for "I'm off on a fishing trip; you stay home and look after the nest"- to bowing and tapping the ground with their beaks - a way of staking claim to their nest site and saying "hands off my nesting place".

The camera on Fidra gave fantastic images of puffins, landing with beaks full of sand eels to feed their chicks, scuffling comically around their burrows or just basking in the sun. Through the Fidra camera marvellous views were had of nesting Guillemots, Razorbills, Kittiwakes and Shags, with even two adult Peregrines and a juvenile making a guest appearance on several occasions.

Just three months after opening, visitor admissions soared to a total of 30,000 by the end of August, sending the Centre well on its way to achieving its annual target of 60,000 visitors. By December, 2000 100,000 people had visited the Centre! It has gone from strength to strength. Targets have been exceeded. The exhibitions, shop and cafe have all proved very popular with both locals and visitors. This has been crucial in helping to ensure the viability of the Centre. Environmental education (working with schools, colleges and universities) is a key objective of the Centre and, in partnership with East Lothian Council, an Education Officer has been appointed to develop this very important area. School visits are promoted and education packs are being prepared to help students to appreciate and understand the importance of environmental issues.

The live images from the Bass and Fidra have been a huge success. The close-up pictures of the Gannets and Puffins have been stunning. During winter after the Gannets left, the cameras on the Bass were removed and one was set up on the roof of the Centre to allow visitors to watch the interesting shore birds and life on the nearby rocks.

Many events have taken place at the Centre during the winter which include bazaars, Christmas parties, Birthday parties and Optic Binocular Days. The auditorium is now the venue for a recently-formed North Berwick Cinema Club to allow East Lothian residents the opportunity to see good films.

One of the main features of any trip to the Centre is the Exhibition staff - an enthusiastic team of volunteers and full-time staff members who are on hand to help with information and advice. The Visitors Book is full of praise for the friendly and helpful staff.

Tom Brock, Director of the Scottish Seabird Centre says "We now have a marvellous Centre of which we are extremely proud. This unique visitor attraction is undoubtedly achieving its aim of increasing awareness and appreciation of Scotland's natural environment, boosting local tourism, rejuvenating the harbour area and providing a great day out."

ARTICLE COMPILED BY MARY TEBBLE FROM NEWSLETTERS AND LEAFLETS ISSUED BY THE SCOTTISH SEABIRD CENTRE

REMEMBER:

The NATS are visiting the Seabird Centre on Saturday, 5th May. Phone Michael Osborne if you would like a lift to North Berwick.

SEABIRD CENTRE AT NORTH BERWICK - TOP ARCHITECTURAL AWARD

STOP PRESS: The Centre has just won the top architectural award - 'The Sir Robert Grieve Award' for its environmentally friendly building and for its sustainability.

INFORMATION

ADMISSION TIMES 10.00 - 18.00 in summer
10.00 - 16.00 in winter
Last admission 45 minutes before closing time.

ADMISSION CHARGES	Adult	£4.50
	Child/concession	£3.20
ANNUAL MEMBERSHIP		£10

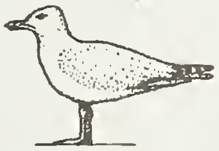
PARTIES: one free place for every ten booked.
The building is fully accessible by wheelchair. Induction loops are available.
Disabled parking spaces are close to the Centre.
The Seabird Centre Car Park is 5 minutes walk away in the town. Follow signs.

AT THE SEASIDE

ANAGRAMS QUIZ

1. LUGL
2. HLESL
3. AWSEDEE
4. BEBLEP
5. CORK
6. VEAW
7. IPEMTL
8. LHYFELIJS
9. DASN
10. TRAWE
11. FICFL
12. BARC
13. BESOLTR
14. UYOB
15. BARACENL
16. ELCER
17. MEANOEN
18. DASHKERN
19. LASE
20. LUMSES
21. DERIECUDK (5,4)
22. LOFTAMSTADSEMJAN (7,3,6)
23. LOCKEC
24. RASHFIST
25. WESRIMM
26. CHATY
27. SAFEMIRNH
28. TICTUFELSH
29. ASE
30. CHACKIRDE
31. TOLFA
32. NEGNAT
33. RESAINCHU (3,6)
34. RUNTTOESN
35. STABAGIONIL (7,4)
36. BLITAFOE
37. KENBAPEDUCTSAD (6,3,5)
38. CANDLESAST
39. RUROFBADS
40. POCKOLOR

HOPE YOU HAVE FUN! MARY TEBBLE *(Answers on page 17)*



FORTH ISLANDS BIRD COUNT
2000

The year 2000 seems to have been another successful year for the birds nesting on the islands in the Firth of Forth, with many species showing increases over the previous year.

FULMAR: *In recent years, numbers peaked in 1997 at 2045 AOS before dipping. Last year there were 1479 and this year 1676 AOS, an increase of 13%. However May Isle reported poor breeding success with only 0.37 chicks per incubating pair.*

CORMORANT: *Overall numbers up by 17% on last year to 440 nests, and getting close to the 1997 total of 460. The biggest increase was 52% on Craigleith while neighbouring Lamb remained stable.*

SHAG: *Numbers of nests increased from 618 last year to 1050. In contrast the numbers on the Bass dropped once again, no doubt due to the pressure from the spread of the Gannets. The reports from May Isle claim their highest breeding success since intensive monitoring began there in 1986 of 1.48 chicks per incubated nest.*

GULLS: *Not all species were counted on all islands. Where counts were made, numbers of Lesser Black-backed and Herring would seem to be down.*

KITTIWAKE: *Numbers are up by 289 over last year, giving a total of 7108 nests. This is still down on the 1997 total of 11229. The May Isle reported their most successful season since 1989 with average breeding of 0.97 chicks per completed nest.*

TERNS: *Generally the numbers have increased though the Common Terns suffered significantly with losses of 40% of their egg stage in June on Long Craig.*

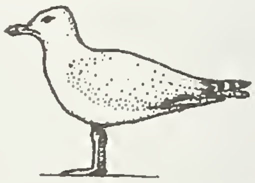
RAZORBILL: *Numbers are fairly stable at 3660 pairs this year, a drop of 209 from last year.*

GUILLEMOT: *Up from last year to 36732. Numbers increased on all islands except Lamb.*

It is difficult to determine why numbers fluctuate from year to year. Obviously bad weather or human disturbance at the wrong time will cause problems. It is interesting to note that there has been no commercial fishing this year for sand-eels on the Wee Bankie. Certain species of seabirds (e.g. Kittiwake and Shag) rely heavily on sand-eels and this year the reports from May Isle suggest that these species show much better breeding success than the long term average. Sand-eels do not appear to be important in the diet of Fulmars and their breeding success this year was below the long term average. If the fishery is the reason, then it will be interesting to see the effects this will have on seabird numbers on the islands of the outer Forth in the coming years.

Thanks to the Forth Seabird Group for the count figures and comments.

BILL BRUCE



SUMMARY of SEABIRD COUNTS for the YEAR 2000

	Bass Rock	Craigleith	Lamb	Fidra	Eyebroughty	Inchkeith	Carr Craig	Inchcolm	Haystack	Inchmkry	Inchg/ Frb	Long Craig	May	Total
Fulmar (AOS)	68	144	5	154	0	417	0	257	0	30	234	0	367	1676
Cormorant (nests)	0	85+	133	0	0	101	121	0	0	0	0	0	0	440+
Shag (nests)	28	208	46	123	0	58	7	3	4	32	0	0	541	1050
Gannet (nests)	X	0	0	0	0	0	0	0	0	0	0	0	0	X
Eider (nests)	X	X	0	X	3	X	1	1	1	263	59	X	892	1220+
Great B-B Gull (nests)	1	3	1	0	0	X	0	1	0	0	1	0	23	30+
LBB Gull (nests)	25	X	3	179	0	X	2+	X	1-2?	230	16+	0	1442	1898+
Herring Gull (nests)	210	X	36	1716	3	X	62	X	22	231	327	0	3067	5674+
Kittiwake (nests)	1000	539	132	343	0	365	0	111	0	0	0	0	4618	7108
Common Tern (nests)	0	0	0	0	0	0	0	0	0	0	+	75	303	378+
Arctic Tern (nests)	0	0	0	0	0	0	0	0	0	0	0	0	908	908
RoseateTern (nests)														12-13
Sandwich Tern (nests)	0	0	0	0	0	0	0	0	0	0	0	0	300	c300
Razorbill (sites)	83	200	87	110	0	64	0	11	0	0	0	0	3105	3660
Guillemot (birds on cliff)	3570	2878	2523	643	0	73	0	0	0	0	0	0	27045	36732
Puffin (birds)	X	X	X	398	0	1373	0	52	0	15	0	0	X	1838+

KEY - AOS = Apparently occupied sites; x = present but no count; 0 = none breeding; Frb = Forth Rail Bridge; + = incomplete total

Carex Maritima (Curved Sedge) - back after 150 years

On May 15 Mary Clarkson and I went for a short walk along the coast from Gullane towards North Berwick, and on our way we stopped to look at some of the attractive plants which grow thereabouts in the spring. In a little marsh we found around 20 spikes of the deep crimson subspecies of Early Marsh Orchid - Dactylorhiza incarnata ssp coccinea. This is quite a rarity and since the more widespread Northern Marsh Orchid (Dactylorhiza purpurella) was nearby we were able to contrast the crimson of the one with the purple of the other.

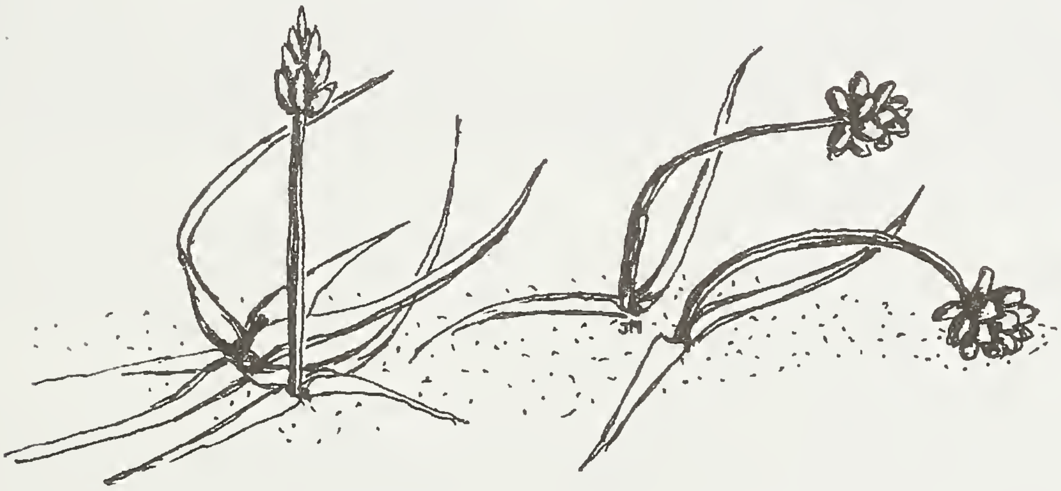
Further along were Cowslips (Primula veris) and some large patches of Purple Milk Vetch (Astragalus danicus) though the pretty little Rue-leaved Saxifrage (Saxifraga tridactylides) was over. But the most extraordinary find of the day was by a little flush: we stopped to look at the sedges and were amazed to find a plant that only one of us had seen before - on the north coast of Scotland, and much later in the year :~

Carex maritima (Curved Sedge) grows in coastal sand, and it is only a few inches high. When it first comes into flower it is upright, with an oval flowerhead; but as the seeds fill out, and the flowerhead becomes almost spherical, the stem curves over until it touches the sand and effectively plants its own seeds.

This plant has not been recorded along the Lothian coast since 1853, and we have no idea how it got to its present site, or indeed how long it has been there. As sedges go it's not particularly noticeable, and most people ignore sedges anyway. There's just a tiny colony growing in a very small area, with Carex nigra (Common Sedge) and Carex flacca (Glaucous Sedge), both common in the Lothians.

Pyramidal Orchid (Orchis pyramidalis) is another plant which has put in an appearance (at Aberlady) after a long absence from the Lothian coastline, but the very fine orchid seeds can probably blow for quite long distances, while the large sedge seeds certainly can't. The nearest known site for the sedge is near Montrose and we wonder if the seeds can float that distance and be viable.

JACKIE MUSCOTT



CAREX MARITIMA - Curved Sedge

QUIZ ANSWERS
1 GULL 2 SHELL 3 SEAWEED 4 PEBBLE 5 ROCK 6 WAVE 7 LIMPET 8 JELLYFISH 9 SAND
10 WATER 11 CLIFF 12 CRAB 13 LOBSTER 14 BUOY 15 BARNACLE 16 CREEL 17 ANEMONE
18 REDSHANK 19 SEAL 20 MUSSEL 21 EIDER DUCK 22 FLOTSAM AND JETSAM 23 COCKLE 24 STARFISH
25 SWIMMER 26 YACHT 27 FISHERMAN 28 CUTTLEFISH 29 SEA 30 DECKCHAIR 31 FLOAT
32 GANNET 33 SEA URCHIN 34 TURNSTONE 35 SAILING BOAT 36 LIFEBOAT 37 BUCKET AND SPADE
38 SANDCASTLE 39 SURFBOARD 40 ROCKPOOL

THE BINGS OF WEST LOTHIAN

FROM DAVID LIVINGSTONE ....
TO LOCAL BIODIVERSITY ACTION PROGRAMMES

To many people West Lothian is still best known for bings and a history dominated by its former oil shale industry. Despite its present day global role in high-tech business, which now shapes the economic and social structure of the county, the domination of the landscape by massive red shale bings makes it difficult to forget the past.

With an economy based on agriculture and textiles at the beginning of the 19th century James 'Paraffin' Young came to the area in 1850 to create an industry that was nationally to influence the Industrial Revolution, and locally to dramatically transform West Lothian's wealth, culture and environment.

The discovery of oil shale, and the oil that it would give up by distilling and refining, was all of James Young's doing. A Glasgow chemist with an enterprising talent, he opened the first production plant in Bathgate in 1851. For the next 100 years the industry was to grow, flourish and then decline as eventually cheaper imports became available. However, the impact of the industry was considerable. The population of the county exploded. Broxburn's population rose from 600 in 1861 to 6,000 in 1891, and as each new pit was opened so new works and villages were created, interlinked with railways and new linking networks of footpaths. The Irish came, and they often picked fights with the Highlanders who had also come to find work, having been forced out of their homes by the clearances. With such influxes cultures changed, with for example Presbyterians finding themselves living with Catholics. The ways of the countryside also changed to the ways of an urban population.

The generated wealth largely paid for David Livingstone's exploits, since he was a close friend of Young. Municipal buildings and churches were erected and houses of some style were built to accommodate the pit owners and their managers. The pace of change was dramatic, with little concern for the environmental consequences as is still illustrated by the bings of waste shale. After all, the new and developing industrial world needed oil.

At the height of the industry's production of oils and waxes, the mining and processing of the oil rich shale would have created a foul, polluted and probably life-threatening environment. There are insights of this in the Public Health Reports of the time which suggest that the dust, smoke and stench of the production plants, and the contamination of water supplies and rivers, was horrendous. The Almond, for example, became so polluted that in 1891 it was reported that no fish lived in it and it was even unsuitable for horses, cattle and sheep to drink. While, in the summer, the continuous pumping of polluted water from the mines to keep them dry for working, in turn created severe shortages of water for domestic use, since ground-water levels were so drawn down that wells ran dry. So desperate did this become that inhabitants had to use the polluted water pumped from the mines!

So what of biodiversity? No doubt the rural community despaired at the urbanisation while poachers would have lost their local fishing and hunting grounds. More seriously, intensive food production to feed the growing population would have changed the landscape - bringing into production areas previously too marginal to make it worthwhile, with consequential effects upon the local wildlife. As an aside, down the pits there were, of course, ponies. These 'lived' underground and with the hay that was sent down, so came the mice. Some pits were overrun with them. Curiously stories suggest that it was mice that occupied shale pits but rats occupied the coal mines! Even the biodiversity of the pits creates an interesting insight into working conditions!

This is all now history. The industry had come to its natural economic end by the 1960s and little remains of the works - a whole heritage swept away. The bings, however, do remain, some will be with us, perhaps, for ever. The stunningly shaped Five Sisters at Westwood, and the massive flat-topped mountain of shale at Greendykes, Broxburn are scheduled as industrial monuments by Historic Scotland. So they are protected. Others are being actively worked, since shale is a valuable fill material and both the M8 and M9 motorways are bedded on it; more are destined to be worked. Some have been flattened and others expensively shaped. That at Seafield now has an artificial Ice Age crag and tail form while the East Whitburn bing, Whitrigg, could be argued to still look like a bing even though it has been nicely moulded and partially planted with trees.

The legacy of water pollution from both the abandoned coal mines and oil shale pits still remains. No pumping is done so the tunnel complexes have filled up and the groundwater level has risen, in some places emptying into the catchment of the River Almond and carrying iron-contaminated water into the river system. Much of this will take generations to resolve, if ever, and it could be speculated that with increased rainfall as a result of climate change the problem might get worse before it gets better. However there is a commitment to improve the situation, as exemplified by the Coal Authority's handling of the closure of the Polkemmet coal mine at Whitburn. This has prevented a major ecological disaster and is an important success story of recent years. The rising mine water there is now pumped into settling lagoons after chemical treatment, and high quality water is then returned to the river.

Attitudes towards the bings have changed. The bing at North Addiewell is now a Scottish Wildlife Trust Nature Reserve. The bing at Faucheldean is an important wildlife site while at Whitrigg an interesting flora is developing after site restoration. It is therefore generally accepted that many bings now have an important wildlife value as their biodiversity has developed naturally over many years of abandonment.

It is therefore hardly surprising that in the West Lothian Local Biodiversity Action Plan (LBAP) oil shale bings feature as one of the eight priority habitat-types in the county. As habitats they are unique and only occur in West Lothian - truly a global resource unless nature conservationists in Estonia say otherwise, because it still has an active oil shale industry. And, although very obvious in the landscape, this habitat type only covers 0.4% of the total land area of West Lothian - it is rare.

Because the shale is inert, colonisation by plants and animals is limited by nutrients and water, not by toxicity as on many coal bings. The result is a great variety of habitats - from seminatural grassland to heather, scrub and pioneer woodland. With such a variety an abundance of rare and unusual plants can be found and these in turn support a wealth of insects, animals and birds. The LBAP lists a 100 priority species identified from the 2000 or so recorded in the county and these represent the global, national and locally important species that are present in West Lothian. Ten of these species are found on bings including the Greater Butterfly Orchid, Stagshorn Clubmoss, Young's Helleborine and Quaking Grass. Many other birds, animals and insects on this exclusive list will also be found. The argument for the protection of the bing habitat is therefore an important one.

West Lothian Council is now in the process of purchasing half of the mountainous Greendykes Bing at Broxburn, to safeguard it for the future.

JOHN SHELDON

THE FIVE SISTERS - A WEST LOTHIAN LANDMARK

Targets in Bing Management

1. To make local bio-diversity enhancement a priority in the restoration conditions of any worked bing.
2. All rehabilitated bings to be managed to maximise their wildlife value.
3. Naturally vegetated bings to be excluded from any development that would put at risk their unique wildlife function

REFERENCE:

Planning for Biodiversity Action in West Lothian -- Shale Bings Page 29

PLANT GALLS

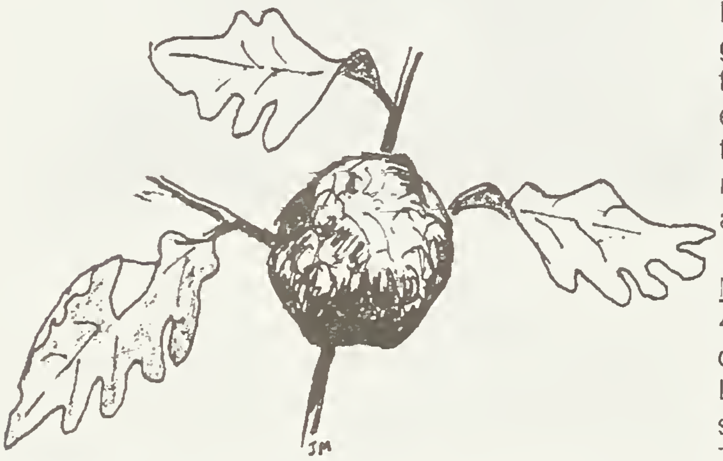
There are a great many plant galls which are caused by a variety of organisms. Each organism forms its own particular gall shape and position on the plant. Generally each gall causer attacks a specific genus of plant and in some cases a specific species. The gall causers include :

(a) Gall-wasps
(b) Sawflies, mainly Tenthredinidae family
(c) Gall-flies
(d) Gall-midges
(e) some Aphids
(f) some Eel-worms
(g) some Weevils
(h) some Micro-moths
(i) Gall-mites, not like normal mites, but microscopic, less than 1/2 mm and cone shaped with 4 legs at the broader head end.

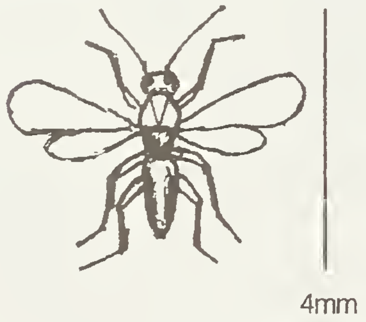
A secretion from the female while laying the egg, or from the newly hatched larva, (depends on the species) stimulates the plant cells to form the extra distinctive growth, which then serves as a shelter and food for the developing larva.

The life-styles of the gall causers are very varied. The following are some examples of the more common galls which are readily seen:

OAK APPLE GALL The 'oak apple' is a spherical, pinky fawny, scaly gall about 2-3 cm diameter.



The wingless female gall-wasp, *Biorhiza pallida* lays up to 30 eggs at the base of the Oak bud. These eggs are not fertilised; there are no males at this stage. As the gall grows, many chambers are formed within, each with a growing larva. In the summer the winged adults emerge by boring through the gall. Some galls produce females and the others produce males.

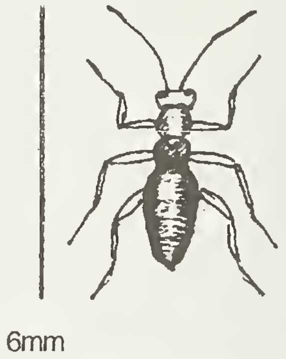


BIORHIZA PALLIDA

Sexual female emerges from OAK APPLE

After mating, the female lays fertilised eggs in the rootlets of the oak. The root-gall is less than 1 cm diameter, brownish and spherical. Each gall has only one larva. After about 16 months wingless females emerge ready to start the cycle over again.

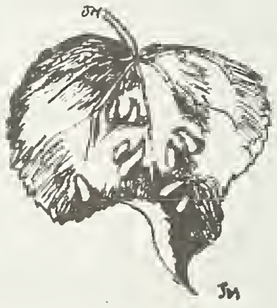
Non-sexual female creates OAK APPLE



This two year cycle is known as Alternation of Generations. In the case of *Biorhiza pallida* the wingless and the winged females are diploid, i.e. their chromosomes are paired. The males are haploid, i.e. they have only one set of chromosomes. It appears that some wingless females lay only diploid eggs, which give rise to females and the others lay only haploid eggs, which give rise to males.

SPANGLE GALLS are small red discs, a few millimetres in diameter on the underside of Oak leaves. These are caused by the gall-wasp *Neuroterus quercus-baccarum*. The galls drop to the ground before the leaves fall and the larva continues to develop in the gall and spends the winter there. In April wingless females emerge and lay parthenogenic (unfertilised) eggs in the young catkins where galls like red currants form, one larva to each. In the summer, winged males and females emerge and so the cycle starts again.

NAIL GALLS are small, about 4mm, conical shaped growths on the surface of the leaves of Lime. There are usually several on the one leaf. These are caused by the gall-mite Eriophyes.



ROBIN'S PINCUSHION is a gall on wild Roses. It looks like a tangle of red filaments; the size is variable. Inside the filamentous mass is a woody chamber of up to 60 cells each with a developing larva. By autumn the gall (*Dipolepis rosae*) loses its bright red colour and becomes dark brownish. The larvae remain inside the gall and pupate over the winter. The adults emerge in May and lay eggs in the leaf buds. There are very few males and reproduction is mainly by parthenogenic eggs. Alternation of Generations is unknown in this species of gall-wasp.

BEAN GALLS are red bean-shaped galls on Willow leaves. The gall protrudes on both the upper and lower surfaces and is firm to touch. These are caused by the sawfly *Pontania proxima*. The fully grown larvae leave the gall and pupate in a yellow cocoon in the ground. Males of this species are very rare and females mostly lay parthenogenic eggs in the leaf buds.

PSEUDOCONE GALLS appear on Spruce. The old galls after the insects have emerged look just like a spruce cone, hence the name, and this is when they are noticeable. While the insects are maturing the galls are more like the foliage. These galls are caused by the aphid *Adelges abietis*. Another aphid *Adelges cooleyi* makes a longer narrower gall. Like other aphids, most *Adelges spp*. spend time on a secondary host, usually other conifers, but no galls are formed. *Adelges abietis* is an exception, spending its entire life on Spruce.

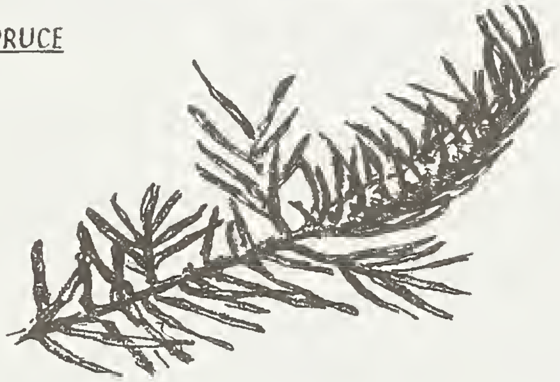
The gall-midge *Dasyneura marginentorquens* devastates Willow trees especially Osier. The midge larvae cause the edges of the leaf to curl downwards and so enclose themselves. By autumn the larvae fall to the ground and overwinter as pupae. The adults emerge in the spring and lay eggs in the bud scales. As a result of the attack, in autumn, the leaves are curled and brownish and the underside is covered in a very fine mat of brown fibres. Infestation can be so great that all the leaves on a tree are affected.

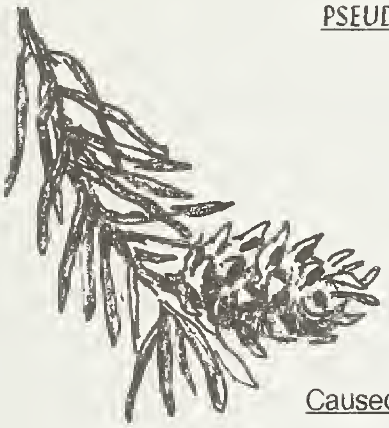
This is what, I believe, we saw on an NATS outing on the 9th September on the Willows pointed out to us by Jean Murray.

ENA GILLESPIE

PSEUDOCONE GALLS on SPRUCE

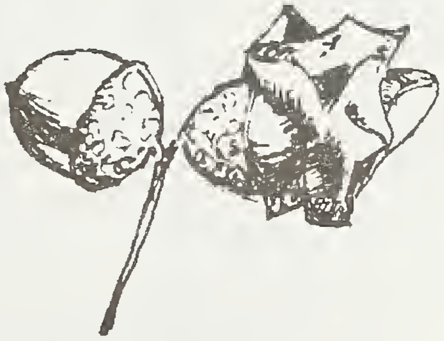
Caused by *Adelges cooleyi* (Feb)





Caused by *Adelges abietis* (May)

The Knopper Gall



KNOPPER GALL
on acorn, formed by the wasp
ANDRICUS QUERCUSCALICIS

Most of us had never heard of nor seen the Knopper Gall which attacks acorns, until Summer 2000. Our first experience of it was on the Gosford outing when we noticed these weird structures littering the path under an Oak tree. Many of them were bright green and sticky; others had become hard and brown. They are ridged, irregular objects looking like the top of a rolled, collapsible umbrella. They break out between the cup and the acorn; several may be borne on the same acorn cup. The causer is a small gall wasp which lays its eggs on the young acorn and when the eggs hatch, the tissue swells up round the grubs to form the galls. The larvae feed on these nutritious tissues: they are unilocular, i.e. with one larva inside each gall. The larvae pupate in the galls which usually fall from the tree. Asexual female adults emerge in spring and induce galls on Turkey Oak catkins from which a bisexual generation emerges and the cycle is repeated.

It is only very recently that Knopper Galls have been seen in Scotland. They were introduced in the Sixties and have been spreading from the south ever since. I have since found galls on Oaks at Hopetoun, Lauriston Castle, Davidson's Mains Park; and they must be on the Oaks on Corstorphine Hill though I have not been there to see.

The Marble Gall wasp (*Andricus kollari*) on Oak also alternates with the Turkey Oak. It also is a unilocular gall from which the parthogenic females emerge before laying eggs on catkin buds from which a bisexual generation emerges to repeat the life cycle (on *Quercus robur* or *Quercus petraea*).

What complicated lives! A further complication is that many parasites such as ichneumons attack the gall wasp grubs so that insects emerging from a gall may not be the gall causers!

References: **Keys to British Plant Galls** by F.B. Stubbs Published by British Plant Gall Society
Guide to Insects of Britain and Western Europe by Michael Chinery

MARY ROBERTSON

NATURAL HISTORY SOCIETY EXCURSIONS - *Then and Now*

Currently the Excursion Committee is anxiously seeking volunteers to serve for a 2 or 3 year spell. And it is always looking for suggestions for outings. So, on referring to a volume of past Transactions of the Society I was intrigued to find a paper presented almost 100 years ago (in 1905), which shows that the position then was much the same as it is in 2001.

The author obviously had very strong views on 'The Aims of Field-Club Excursions', which he defines as "*all kinds of excursions of local Natural History Societies - botanical or zoological - shore walks or mountain climbs, dredging excursions and fungus forays.... I do not include geological excursions, because open-air geology has a more definite field than botany or zoology*".

Some of the ideas put forward for possible excursions seem somewhat curious, but a fair number are still valid and may even give our present members an idea for an outing. The following extracts are taken from the paper read by Mr. W. C. Crawford FRSE on 26th April 1905.

"I would make two remarks at the outset - they are axiomatic, I mean self-evident:

1. Excursions are for nature study - that is, their ultimate aim is to cultivate the habit of observing things and of reasoning from what is observed. They should also keep us in touch with nature.

2. Every excursion should have a definite aim. A walk in the country, a visit to some old castle, with or without tea afterwards, is not a field-naturalist's excursion. It is desirable for convenience to consider one subject, or a small number of connected subjects, at a time.

Let me now give a score of subjects suitable for Field-Club Excursions:

(1) A shore walk (a) Above high tide: xerophyte societies of plants, shore grasses, folding of leaves to prevent loss of moisture etc. (b) Below high water: rock pools, different types of worms, crustaceans etc.
(2) A most interesting study is a Peat bog : vegetation - lack of bacteria - nature of peaty water.....
(3) A Woodland Walk : effect of shade on plant life - deciduous trees and conifers - saprophytes on fallen leaves etc.
(4) A hill top, heath, moor etc. The Pentlands should always be included once a year in Edinburgh excursions.
(3) Trace a stream along its course Look for molluscs, difference in growth of algae where stream flows quickly and slowly.
(6) Visit to a pond or swamp Fresh water insects.
(7) Shore walk for marine algae At Musselburgh the parasitic worm in cockles might be found; consider formation of pearls.
(8) A tow-netting excursion, by which means enormous numbers of organisms and larvae of many kinds may be found: plankton.
(9) An excursion to illustrate biology of microscopic fungi.
(10) Excursion to look for Galls - change of tissue due to irritation.
(11) Many biological facts should have excursions devoted to their illustrations eg Parthogenesis, aphids, ants, social and solitary insects.
(12) An excursion or two devoted to insects.
(13) An afternoon might be well spent in studying weeds: where do they come from etc.
(14) To see Cheese-making on scientific principles would be most illuminating.
(15) In this city an excursion to a brewery to see how much depends on the tiny yeast plant.
(16) A visit to a bacteriological laboratory.
(17) Few more informing excursions could be made than occasional visits to experimental agricultural institutions.
(18) An excursion which would furnish material for much prolific thought would be a visit to the fruit-farms near Blairgowrie....[Some hundreds of women workers are employed: they have country air in one of the most beautiful parts of Perthshire, good food and healthy dwellings. It is altogether a social work of great interest and importance].
(19) In speaking of rearing crops and fruit, a visit might be paid to the institution at Corstorphine which aims at developing the well-instructed female gardener.
(20) At some point of an excursion a few practical demonstrations might be given to the more philosophical aspect of the field-naturalists studies: for example a little study of species-making.

This list of subjects for Field Club excursions might, by giving the matter thought, be greatly extended. What I have written has been hurriedly done, - it should have been more logically arranged. The aim of my communication has been to indicate that excursions should grow out of ideas- as rain-drops are formed round particles of dust; and that excursions, like genial showers, should in turn help to make new, prolific ideas grow. Members should make suggestions. Finally, the most important social requirement is co-operation . Many are quite able to co-operate who do not do so: every member would do good to his society and to himself by trying."

AND NOW

On balance, our records compare favourably with those advocated by an Edwardian Amateur Naturalist. We are fortunate in being able to call on the expertise of a valuable nucleus of members and stalwart friends, and on the professional services of countryside rangers.

Ideas, inspiration, offers of help in the field and at home are always welcome, as they all contribute to a stimulating excursion programme. LYN BLADES

The STEWARD of the GARDEN

A BIO-DIVERSION

If the birds you long wish to see
Then just let your own garden be
For where the slugs and snails abound
Stately thrushes are often found.

Let the old crusted tree stumps stand
For the young Woodpeckers to land.
The tangled Honeysuckle may
Provide a nest-site in its day.

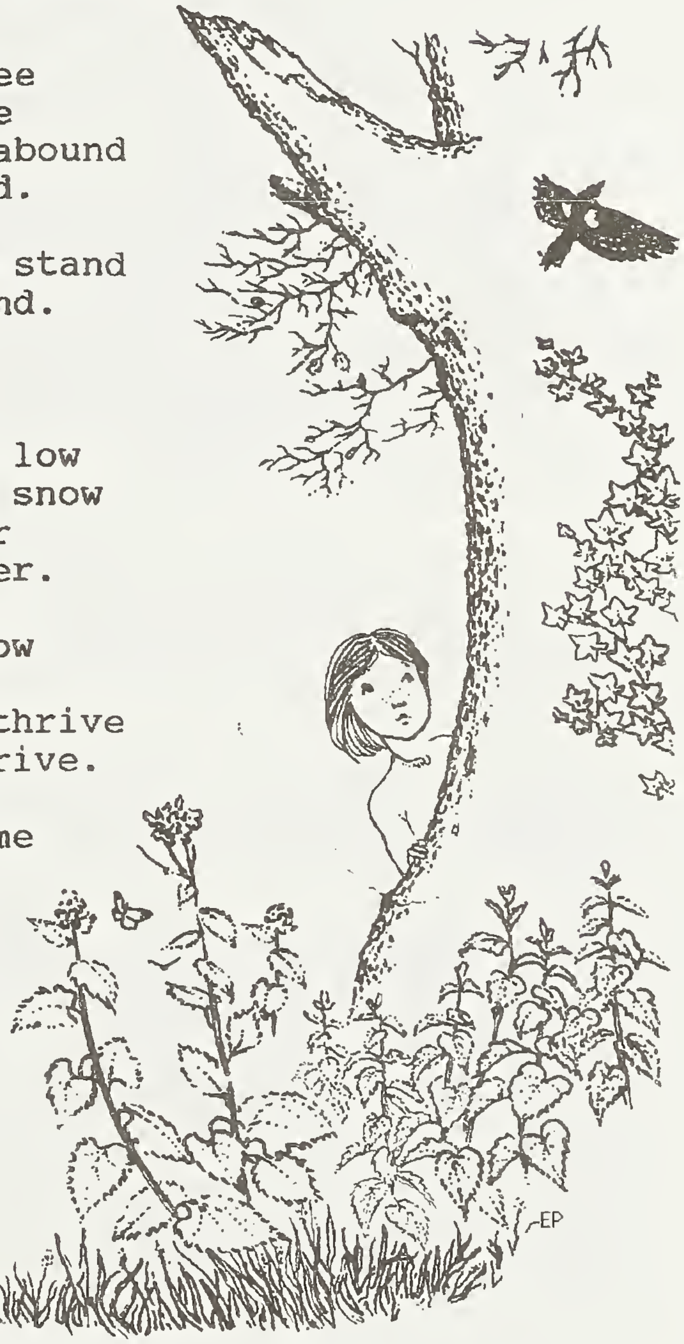
The old leaves that gather down low
Soon give safe shelter from the snow
And where creepy-crawlies linger
There is food for one more singer.

Let the white Garlic Mustard grow
For the new Orange Tip to show
And the green nettles, left to thrive
Will see more Tortoiseshells arrive.

Save for yourself some extra time
To then compose a little rhyme
And more appreciate your share
Of the old garden in your care.

Myriad

Contributed by Eunice Smith



LOONY DOOK!

It is not only we humans who enjoy the 'loony dook'; birds also share this enthusiasm. After very low overnight temperatures, our small garden pond was frozen over. But on January 23rd temperatures were raised slightly and we had some rain which settled on top of the pond. This produced a scene of an ornithological bathing party with Blackbird, Dunnock, Chaffinch and Bluetit standing on the ice bathing in about an inch of water! A nearby Blackbird was actually standing in a small margarine tub attempting a bath!

EILEEN PERRY

Millennium Dinner

This occasion on 29 February 2000 was a sell-out. Eunice Smith, with her usual enthusiasm, brought this idea to life. She persuaded some members to wear their own interpretation of turn-of-the-century (1900) gear. On each table were extracts from early Journals. The research took place in The Scottish Ornithological Club Library on Regent Terrace. The librarian was keen the library should be used regularly. The students of Telford College learning their trade, provided the food, service and surroundings in The Telford College Restaurant. We were treated to a leisurely meal modelled on those served on the Titanic. Dishes included a lively wild mushroom soup, Creme Opera and Beef Forestiere. Between courses speakers recalled a flavour of the Edinburgh Natural History Society of the past. Subject material varied from extracts of past papers to personal recollections of outings and amusing mishaps. In the intervals between courses the students were amused by our speakers. Perhaps some may become members of the ENHS. The evening ended with a presentation to Elizabeth Farquharson, paying tribute to her active nurture of the Society in her role as Honorary President.

SARAH ADAMSON

PRESIDENT'S WELCOME

Welcome to the Society's Millennium Dinner. Our thanks to Eunice Smith, whose idea the dinner was, and who has been largely responsible for the organisation.

The end of a Millennium is a time to look both forwards and back, and as I don't feel competent to do the former, I'll indulge in a little bit of doing the latter.

As most of us are aware, the Society was started in 1869 as the Edinburgh Naturalists Field Club, and it was only after 10 years that evening indoor meetings were instituted. Some members also became quite involved in microscopical work, resulting in a reference to microscopy being added and the Society's title becoming 'The Edinburgh Field Naturalists and Microscopical Society'. The microscopy section met fortnightly throughout the winter on Saturday evenings in members' homes.

Another more academic counterpart, the Scottish Natural History Society, was founded in 1881, and possibly as a result of liaison between the Societies while preparing to welcome the British Association to Edinburgh in 1921, the two societies amalgamated in that year.

Volumes of 'transactions' were published from 1881 to 1915, but after the War it was decided not to resume, because of the greatly increased costs of production. It was thanks to the efforts of Michael Usher that the present series of Journals was started in 1965 after a 50-year gap.

What was the Edinburgh Field Naturalists and Microscopical Society like 100 years ago? It had, as now, about 200 members. The annual subscription, which was to remain the same for many years, was 5s and the annual turnover was about £50.

The evening meetings were, as now, on the fourth Wednesday of each winter month, including December. (There was, for example, a meeting on Wednesday 26th December 1900 - a useful antidote to a Victorian Christmas?). 'Billets' were issued to members in advance of each meeting, setting out the programme for the evening. This consisted chiefly of a discussion of any Society business, small exhibits on subjects of natural history such as we now have on Members' Night, (although I can't imagine that anyone would now want to exhibit a live Cuckoo), and a discussion of so-called 'queries'. These ranged from "What is the best method of preparing moss capsules for serial cutting in paraffin?" to "Do bees cease to store honey in sub-tropical environments with year-round flowers?".

The summer excursions were just as frequent as now and were generally to places that could be reached by train or occasionally by train and Clyde Coast steamer! Fungi was a popular subject then as now drawing, on one occasion, as many as 38 members to view the mushroom beds in the Scotland Street railway tunnel.

The Journal was well illustrated and showed a keen interest in the possibilities of photography as a tool in the study of natural history. Events such as this Dinner are recorded twice in the Society's annals: one in 1919, commemorating its Gold Jubilee, and the other on the occasion of its centenary in 1969. Both were essentially dinners but both are referred to in the record as 'conversazioni'. It is to be noted that in 1919 the wearing of morning dress was stipulated. That perhaps makes Eunice's attempts to get us all to dress up on this occasion seem not so bad after all!

The Menu

WELCOME - The President

******

Canape a L'Amiral

******

Lamb Cutlet with Minted Mashed Potato
Game Terrine
Asparagus Salad
with a Champagne Saffron Vinaigrette (v)

******

Mr Michael Osborne

******

Consomme Olga
Wild Mushroom Soup (v)

******

Miss Jackie Muscott

******

Calvados Glazed Duck with Apple Sauce
Vegetable Marrow Farci (v)
Oven Roasted Sirloin
of Beef Forestiere

A selection of Vegetables and Potatoes

******

Mrs Eunice Smith

******

Peaches in Chartreuse Jelly
Chocolate Painted Eclairs
with French Vanilla Cream
Creme Opera

******

THE HONORARY PRESIDENT
Mrs Elizabeth Farquharson

Coffee and Petit Fours

******

THE PRESIDENT
Mr Munro Dunn

MRS EUNICE SMITH

Eunice Smith's attire was a reminder of the style of apparel worn by ladies in earlier years. She wore hat, gloves, a long skirt and ankle boots. Her only concession to the Millennium year was a flowing scarf (bearing the date of 2000) draped around the brim of her hat. As she looked over the attentive company (a total of 44) she viewed ladies in long dresses, one lady with a feather boa, another with a cameo brooch and yet another consulting the extensive menu through her lorgnette. Some gentlemen in cravats and high collars completed the picture.

She thanked those who had helped make the preparations for the evening and the 'ad hoc' committee which had selected the photocopies of past entries in the Journals of the Society - scattered round the tables as conversation pieces. She reminded the company that The Society was instituted as the Edinburgh Naturalists Field Club in 1869 and later (1921) became the Edinburgh Natural History Society. It would thus only be a few years before the Society could hope to celebrate its 150 years in existence.

To quote her remarks :-

"As our past President Mr Hewat said (at the meeting in 1902) it is nice to see so many ladies present. In response to his remarks of encouragement that ladies should not concern themselves "wherewithal they shall be clothed" and in recognition of modern times I have shortened the hem of my skirt - just an inch or so - but certainly no ankles on show! I do confess it is much more convenient when ploughing through the mud and long grasses. However I am surprised by the extreme to which some of our lady members have gone and do hope that the amount of female flesh now on show both this evening and on our regular outings does not distract our gentlemen members from their study of natural history.

This society has had many important associations over the years. There was discussion, in concert with the Royal Society of Edinburgh and the Royal College of Physicians (I believe that is correct), about the usage of the large building at the foot of the Mound, The Royal Institution. Those societies like us had problems as to where they could house their library. The suggestion was made that there should be a joint library in that prestigious building. It was not to be. As you know in recent times the Natural History Society has continued to have problems as to where we house the Society library.

We have been left with a legacy of interest (and a record of it) by our past members. I shall now give you some examples of the lasting effects that the ENHS had on our natural fauna and flora. As you will see from some of the photocopies distributed round the room regular exhibitions were held and also displays at evening meetings - a tradition which I think is now being revived. Our present day exhibits pale into insignificance beside those shown heretofore.

There were regular displays of live crocodiles - often by a Mr Gillespie. He had displayed a living Young Nile Crocodile, a young American Crocodile, a young broad-fronted crocodile, Mississippi Alligator, Young African Crocodiles ... I dreaded what I was going to find when I read that one of the Society outings ended up for tea at his house near Muiravonside. After tea he took them out for a walk to see ...? I expected it would be crocodiles in the burn or at the least one of his other strange creatures. However it turned out to be foxes and badgers living together. I don't know if the party were relieved or *disappointed! I do think that we should be a little careful on our visits there - just in case.*

I know that among us this evening is a gentleman who made his name at an early age - in his schooldays - by receiving a prize for a collection of rare plants. Rare plants were on show regularly at past meetings of the Society and prizes were given for collections of grasses etc. It also seems to have been common practice that when they found a rare specimen they "dug it up" and competed with each other. Birds' Nest Orchid - "I managed to transfer it to my garden" - but would it survive??

Those interested in fungi - and there was very considerable interest in the early days (again now being revived) - had less reason to be concerned about how the next generation would survive if the fruiting organism were removed. They asked permission from the Marquis of Lothian to collect Polyporus giganteus - relatively common. But I can see no good reason as to why a large quantity of Mitrula paludosa, the beautiful and rare 'Bog Beacon', should be "gathered".

The collecting of plants, grasses and crustacea pales into insignificance compared with their attitude to birds. They poked their fingers into nests and, very generously and regretfully, left an egg in the nest of a Yellow Wagtail since it was the only one. The Gold-Crested Wren was "prepared for a collection". Goldfinches, Long-Tailed Grass Finches, a Virginian Cardinal and many other rarities were regularly displayed - often live specimens.

The infamous Mr Speedy was suspended down a cliff at the end of a rope (which got caught in his beard) and spent 3 hours stranded inside an eagle's cavern before being rescued and let down to the valley below with one eaglet in each pocket. He fell and both birds were crushed. However all was not lost as they are now stuffed in the Museum - that's all right then!! Another time he showed a tame kingfisher killing and swallowing sticklebacks but it soon died!

Human specimens were not excluded from display - a human brain and a human kidney. How would you like to come along to a meeting and find a nest of living ants or a tarantula?

I must not be too severe on the behaviour of those in the past -any of you who were on the bus outing to Kinardochy and saw the men rush to bend a traffic sign so that the bus could move will know that we are not above being ridiculous. Also later in the day the bus was lodged within a grassy bank and we had to dismantle part of the bus before we could set out for home - only to have a stone explode from between the wheels on the motorway.

One of our gentlemen members in recent years saved a lady member from embarrassment and probably physical harm by grabbing her leg as a branch of a tree broke and she started to pitch over a wall.

The Society has been stranded on Cramond Island ...

Although I appear to have criticised the past members of our Society they have indeed left us a rich legacy of interest and record in our archive. I commend the consultation of the old Journals to you. I also remind you that we are now the ones creating and leaving a record. We have a responsibility to record what the natural world is like on our own patch. However I dread to think of what those in years to come will think of some of the rubbish that I personally have written in the Journal!"

MISS JACKIE MUSCOTT

Jackie Muscott's speech concentrated on some of the botanical changes of the last 100 years as revealed by the old Journals. The water plant Pillwort (*Pilularia globulifera*) for instance was reported as "growing in profusion" at Almondell in 1911. It is now extinct in the Lothians, and attempts are being made to re-introduce it. (Interestingly trampling by cattle is believed to be important for its survival.)

Other disappearing plants include the Oyster Plant (*Mertensia maritima*), which in 1901 was noted on the foreshore near Fidra. It was "much grazed by rabbits" which may have contributed to its demise. Actually it is a pretty mobile plant, and made a brief re-appearance at Bilsdean a few years ago, but the young plants were uprooted by autumn gales and never became established.

We have also lost a number of orchids. In 1906 the Early Purple (*Orchis mascula*), Green-winged (*Orchis morio*), Heath Spotted (*Dactylorhiza maculata*) and Greater Butterfly (*Platanthera chlorantha*) were all recorded near Penicuik (then a small village). With the exception of the Heath Spotted, they are now extinct or rare in the Lothians.

On the other hand, some new plants were making early appearances around the turn of the century. Fringe Cups (*Tellima grandiflora*) and Dame's Violet (*Hesperis matronalis*), both garden escapes were noted as rarities in 1903, and Fiddleneck (*Amsinckia micrantha*), a seed contaminant, in 1906 Pyrenean Valerian (*Valeriana pyrenaica*) and Monkey Flower (*Mimulus* sp.), garden escapes, were recorded in 1913. The Monkey Flowers have been particularly successful in colonising and adding colour to our riversides. Ivy-leaved Toadflax (*Cymbalaria muralis*) was also apparently still rare in 1913. (It was first introduced in London around 1620, and by 1640 had already got out, since when it has gradually spread throughout Britain.)

Perhaps the most surprising rarity of 1913 was Rosebay Willowherb (*Chamerion angustifolium*). This plant, now so familiar, was once quite uncommon, largely confined to upland rocks and screes. It tends to get established on disturbed ground, and its population explosion has coincided with the clear-felling of woodland in two world wars, the bombing in the last war, and the closure of the railways and heavy industry, all providing it with suitable habitat.

Habitat loss or change accounts for many of our losses and gains.

MICHAEL OSBORNE read some interesting extracts from old **Transactions** of the Society.

THE HONORARY PRESIDENT

The final speaker, Elizabeth Farquharson, recalled some episodes from past outings, two of which were associated with all-day trips to the Farne Islands. While on the islands quite a swell developed which made timing one's jump back onto the boat rather chancy. One unfortunate member jumped just as the boat moved away and nearly landed in the sea! She was grabbed unceremoniously and hauled back over the edge into the boat.

Another time landing was cancelled at the last minute so the day was spent exploring rock pools along the shore. In no time, off came the boots and trousers and we had a wonderful spectacle of all the latest colours in Marks and Spencers underwear.

One bus trip to somewhere west of Stirling caused a bit of panic when Peter Gunn lapsed into unconsciousness. No one was aware that he was an acute diabetic! The bus changed course and made for the hospital in Stirling where we offloaded Peter out of the back window over people's heads. His recovery was rapid and he was back in Edinburgh that evening. We were more shattered than he was.

Elizabeth was then presented with a book (SARNARI'S MONOGRAPH ON EUROPEAN RUSSULAS) and some truffles as a memento of the occasion.

LETTER FROM ELIZABETH FARQUHARSON

November 2000

Dear Friends

I feel quite unable to thank you adequately for your kindness and generosity at the dinner on 29th February. I was so taken aback by surprise and disbelief when the presentation was made that I failed completely to thank you at the time.

The book is wonderful, with superb illustrations and detailed text. Much of the book is in Italian but it is sufficiently interspersed with English to make it understandable, along with the aid of a dictionary, and translating becomes an enjoyable challenge.

The fungus season is now largely over, but during the summer and autumn the book was used repeatedly, and my knowledge of Russulas and my grasp of the Italian language have improved with commendable speed.

The card that you signed is now inside the book along with a copy of a photograph you gave me, both acting as a permanent reminder of a memorable evening surrounded by so many friends.

ELIZABETH

EXCURSIONS 2000

Saturday	January	15th	Edinburgh Gardens Circuit		Mike Osborne
Saturday	February	19th	Vane Farm RSPB Reserve		Warden
Saturday	March	18th	Melrose Circuit		Christine Campbell
Saturday	April	8th	Musselburgh Lagoons/Kilspindie	O.E1	Charles Pountain
Saturday	April	29th	Boghall Farm/ Bush Estate	G.E1	Stephanie Walker & Graham Swift
Saturday	May	6th	Colinton Dell	Fe.G.E1	Heather McHaffie
Saturday		13th	Oldhamstocks Circuit	G.E1	Margaret Watson
Saturday		20th	East Linton to Hailes Castle	G.E1	Mary Robertson
Friday-Sunday		26-28th	Kindrogan Weekend		
Sunday		28th	Hermitage Open Day		
Wednesday		31st	Newliston House	G.E1	David Adamson
Saturday	June	3rd	Birnie Loch Reserve/Lochore	O.E1	Jim Stewart
Wednesday		7th	Heriot Watt Tree Trail	T.E1	Graham Swift
Saturday		10th	Glenrath	G.H2	Eric & Eileen Perry
Wednesday		14th	Craiglockhart Trail	Gr.E1	Graham Swift
Saturday		17th	Aberlady	O.B.E1	Mary Tebble
Wednesday		21st	Royal Botanic Garden	B.E1	Geoffrey Harper
Saturday		24th	Bo'ness	B.E1	Jackie Muscott
Wednesday		28th	Queen's Park	Ge.H1	Ranger
Saturday	July	1st	Eaglescairnie Mains	G.E1	Michael Williams
Monday-Saturday		3rd-8th	Kincraig,Inverness-shire		
Wednesday		12th	Newhailes	B.G.E1	Eunice Smith
Saturday		15th	Comrie (Cancelled)	G.E1/H2	Lyn Blades
Wednesday		19th	Red Moss to Black Hill	G.H1	David Adamson
Saturday		22nd	Fairliehope	G.B.O.H2	Mike Jones
Wednesday		26th	Carberry Tower	T.E1	Alistair Scott
Saturday		29th	Ladyurd Forest	B.G.H1	Michael Osborne
Wednesday	August	2nd	Malleny Garden (Cancelled)	B.E1	Phil Deacon
Saturday		5th	Norham	G.E1	Duncan Gill
Wednesday		9th	Ravelston House Wood	G.E1	Eliz. Farquharson
Saturday		12th	Wanlockhead	G.E1/H1	Janet Watson
Saturday		19th	Gorebridge to Catcune	B.G.E1	Graham Swift
Saturday		26th	Carrifran Wildwood	G.E1/H2	Philip Ashmole
Saturday	September	2nd	Lammermuir Circuit	Ge.H2	Bill Baird
Saturday		9th	Ettrickbridge Circuit	G.H1	Geo. McDougall
Saturday		16th	Gosford Park	Fu.E1	Mary Clarkson
Saturday					& Eunice Smith
Saturday		23rd	Hopetoun House	Fu.E1	Mike Richardson
Saturday		30th	Tentsmuir	Fu.E1	Gordon Maxwell
Saturday	October	7th	Dawyck Garden	Fu.E1	Roy Watling
Saturday		21st	Vogrie Country Park		Lyn Blades
Saturday	November	18th	South Queensferry Walk		Betty Mitchelhill

EXCURSION CODES

B	Botany	Fu	Fungi	Fe	Ferns
G	General	Ge	Geology	Gr	Grasses
O	Ornithology	T	Trees		

EXCURSIONS 2000

VANE FARM

Date Saturday, 19th February
Leader Warden

Members enjoyed a fine, bright, sunny day when we visited Vane Farm. Snow had fallen during the week and still lay on the Ochils; there was clear visibility all round and though the wind was cold, it was a perfect winter's day.

Many improvements had taken place at this RSPB reserve since my last visit. There was a new car park and a cafeteria. Old trees had been felled, new scrapes dug out and wetlands restored. There were two new hides beyond the Waterston hide, with raised banks on either side of the path leading to them. I noticed a second pond-dipping area for schools. Birch and Rowan had been planted on hill slopes to recreate old woodland.

After an introductory talk in the warm, comfortable school room by one of the RSPB staff, we set out up Benarty Hill where patches of snow still lingered. There wasn't much to see but the walk was exhilarating and at the top, there were views all around, magnificent in the winter sunshine.

We paused at the new feeding station which is hidden by protective fencing, as we returned to the farm for lunch. Here we saw several finches at the bird feeders including Goldfinch and a few Yellowhammers.

In the afternoon we visited the hides to see what was in the scrapes and on the loch. There were several species of duck: many Teal, a few Pochard, Goldeneye, Tufted Duck, Mallard of course, Coot, Curlew and a flock of Lapwing. A lone Greylag Goose was spotted and a Heron lifted off. It was a pleasure to hear a Skylark singing.

We left before the Pink-foot Geese came in, just as another bird group arrived to watch the spectacle.

MARY ROBERTSON

MELROSE CIRCUIT

Date Saturday 18th March
Leader Christine Campbell

It was just the kind of early spring day that we long for during the dark winter months. Twenty two members and one dog assembled to be led by Christine along the banks of the Tweed. As we walked out of Melrose past the N.T.S. properties Priorwood and Harmony House, Song Thrushes, Blackbirds and Dunnocks sang and Jackdaws, Carrion Crows and House Sparrows expressed themselves vocally. We went by ruined Melrose Abbey wherein the heart of King Robert the Bruce is said to be buried, and then past the Chain Bridge. This suspension bridge was constructed in 1826 and I have read that before this time, stilts were available for hire to those horseless people who needed to cross the water.

Plenty of Mallards and Goosanders were in the river and when we sat down on the bank for lunch, a Heron, a Buzzard and a Dipper entertained us. Also encountered were Robin, Wren, Chaffinch, Grey Wagtail, Oystercatcher, Rook, Great Tit, Mute Swan, Black Headed Gull and Wood Pigeon. We came upon a Lime Tree which had a vast number of thin branches growing from the trunk on all sides. Apparently this distortion can be caused by a fungus, a virus or an insect attack. Limes seem to be often afflicted in this way. Some of our more knowledgeable members will be able to enlarge on this.

Although a lovely, warm sunny day it was a little early in the year for flowers. Star attractions were two patches of Sweet Violet (*Viola odorata*) both blue and white ones, the blue particularly very scented. There were only the usual early flowers but still a delight to see and a promise of what we could look forward to.

ERIC & EILEEN PERRY

*According to Naturalists Handbook 17 *Plant Galls* by Redfern and Askew this type of 'Witches Broom' is caused by mechanical damage, such as storm damage or cattle browsing. JM

MUSSELBURGH LAGOONS and KILSPINDIE

Date Saturday, 8th April
Leader Charles Pountain

A good turn out of members and a lovely spring day augured well for the first excursion of the Summer Programme. A flock of Linnets greeted us as we reached the mouth of the Esk at Musselburgh. A pair of Gadwall close in at the river mouth, accompanied by Goldeneye and Mallard, was a good start on the 'duck front'. As we carried on by the sea wall we watched Eider, Velvet Scoter and Long-tailed Duck and to show it wasn't 'all duck' we spotted a group of Guillemot on the water with a pair of Great Crested Grebe embroiled in their 'penguin' display routine not far away; and the Skylarks, so many of them at Musselburgh, wonderful to see and hear but so very sad that they are now a rare bird in many parts of Britain.

We had a short interlude from the birds as we left the sea wall to walk up the path to the active lagoon. There we stood by the pipe bringing in ash in sea water solution all the way from Cockenzie Power Station with its twin chimneys dominating the horizon. This ash lagoon provides a very important wader roost at high tide. It was a low tide this morning so there were no birds on the lagoon but it was still worth looking at, as a reminder that this is all land reclaimed from the sea.

From seeing the active lagoon we moved to the boating pond and looked at Tufted Duck, then just a few yards further on and the three recently-constructed bird hides. Roofless they may be, but most certainly not birdless. In comfort as we looked across the pools we observed a pair of Shoveler, a few Wigeon and Shelduck and lots of Teal. Earlier in the morning we had seen most of the common winter waders by the sea wall but the wader highlight of the morning was a superb Ruff a few yards in front of one of the hides. Reed Buntings were also in evidence.

We went back to the cars and a 'do-it-yourself' lunch, reconvening eventually outside Aberlady Church for an afternoon walk alongside Kilspindie Golf Course to Green Craigs Island. With the weather still perfect we enjoyed watching Red-breasted Mergansers on the sea (bringing the total for the day of duck species to twelve) and also observing several newly arrived Wheatears on the rocks. A Grey Seal kept us company and the day finished with a lovely Brown Hare near the Church.

It almost finished in total embarrassment for this writer. A golf ball speeding its way across the green- "another Wheatear" I shouted. Luckily everyone was out of earshot apart from one wonderfully sympathetic member!

CHARLES POUNTAIN

BOGHALL FARM and BUSH ESTATE

Date Saturday, 29th April
Leader Stephanie Walker
and Graham Swift

MORNING

The early morning fog had lifted, thankfully, when nineteen of us met at Boghall Farm on the Bush Estate, which covers 1474 hectares in all. Most of the land is owned by the University of Edinburgh and the Scottish Agriculture College. There is a wide diversity of land types and farming enterprises on the Estate, with sheep farming on the Pentland Hills, sheep and suckler cow grazing on the uplands and arable and dairying projects lower down. Boghall Farm is one of three farms where these enterprises are carried out commercially to demonstrate best practices.

We were welcomed to the Centre by Stephanie Walker, their Countryside Conservation Officer. We had been intrigued by the 'BADGERS' warning sign on the A702 nearby. From the car park, Stephanie showed us where the Badgers live on the hill, above where now five-week-old lambs were skipping around. She suggested that we might like to come Badger-watching one evening.

Explaining the work of the Centre, Stephanie took us to Cowloan Wood on the other side of the A702. We passed some experimental crop strips and Stephanie pointed out a hundred-year-old Beech and Hawthorn hedge, A-shaped in cross-section and thick enough to allow small birds to nest without fear of predation. A few trees left taller give perching opportunities: a Yellowhammer was on one. We saw Oystercatchers feeding on the open field with a Lapwing tumbling above and a Skylark mounting high in song.

In Cowloan Wood we saw the effects of coppicing which generates multi-trunk growth of the trees. Many of the 110 hectares of woodland at the Bush are open to the public where numerous different species and ages of trees can be found. The woodlands are managed not only for timber production but also for shelter, wildlife and public recreation. At times, thinning and felling operations are carried out in selected areas to ensure vigorous growth and prevent moribundity. Broadleaved species such as Oak, Ash, Cherry, Birch and Alder, newly-planted, are protected from grazing rabbits and deer with tree shelters, spiral guards and fences.

The Boghall Burn runs through Cowloan Wood and there was ample evidence of the recent heavy rainfall- said to be the longest continuous downpour for two hundred years. The burn was still swollen and plants on the banks had been awash, including Few-flowered Leek (*Allium paradoxum*) which no doubt will set up home invasively further downstream. In one place a wee bridge had been dislodged. More work for the Bush workforce!

Newly-arrived Willow Warblers were singing everywhere, with banks of Opposite-leaved Golden Saxifrage (*Chryosplenium oppositifolium*) underfoot. We saw the opening flowers of Greater Stitchwort (*Stellaria holostea*) and some white Pink Purslane (*Claytonia sibirica*) flourishing here.

Further on, we were shown a marshy area, good later in the year for Dragonflies. Stephanie told us that Tawny Owls are sometime seen and that a Barn Owl raised two young in the farm buildings last year.

Following an interesting hedgerow which contained European Larch (*Larix decidua*), Field Maple (*Acer campestre*) and Hornbeam (*Carpinus betulus*) we reached the A702 once more and returned to our cars, being sung on our way by a Blackcap. Near to the car park we heard the delicately spinning high notes of a Goldcrest and the "pit-chew" of a Coletit in nearby conifers. Swallows flitted around the farm buildings.

Some of us had our lunch in the warmth of the Centre, regaled by Stephanie's stories of her overseas adventures and enterprises. We were grateful for her informative guidance during our interesting morning and for Graham Swift's quiet efficient leadership.

MARY TEBBLE

AFTERNOON

An afternoon spent in the grounds around Bush House was not expected to reveal anything out of the ordinary, other than the unexpected attractiveness of an estate so near Edinburgh. But no sooner had we arrived at the public car park just inside the main entrance, than an alert member detected what smelt like the sweet aroma of Balsam Poplar (*Populus balsamifera agg.*). Sure enough, in the pinetum beside the car park was a large Balsam Poplar. The tree was old enough to have numerous suckers at its base. In April the buds and young leaves exude a resin which has the aroma of incense. Two Pinus species with leaves in pairs, Lodgepole Pine (*Pinus contorta*) and Austrian Pine (*P. nigra ssp. nigra*) proved more difficult to identify. The former had the characteristic twisted needles, while the scales of the conical cones had fairly long sharp tips. The needles of the Austrian are longer [10-15cm] than the Lodgepole, rigid and stiff, straight or curved.

At the margin of an old pond was the unusual Skunk Cabbage (*Lysichiton americanus*). This robust member of the Arum family is, as its name suggests, an introduction from Western North America. Its flowers consist of a stout greenish spadix surrounded by a large yellow spathe; very ornamental, but with a foul smell. After the flowers, very large (up to 120cms) oval leaves appear. An attractive cultivated spring flower nearby was the Dog Tooth Violet (*Erythronium dens-canis*), a shade-loving plant with a unique combination of turquoise-green and purplish-brown foliage.

From here, a walk along the grassy parkland to a tree-lined burn revealed stately trees of Wellingtonia (*Sequoiadendron giganteum*), Coast Redwood (*Sequoia sempervirens*) and Western Hemlock (*Tsuga heterophylla*).

Bush House dates back to the late 1700s, when it was built by the Trotter family. Before that the land was owned, drained and planted with trees by a Robert Mowbray, Writer to the Signet. The name 'Bush' refers to his connection with the Leith Timber Bush Company. The origin of the name is interesting. 'Bush' is a corruption of the word Burs (or Burse), a term originating in Bruges and meaning *mercantile exchange*.

In 1578 Edinburgh Town Council Minutes resolved "to buy from John of Dalmahoy the lands known heretofore as the common closets" (common yards) but "new collit the burs". The Timber Burs was established in the area north of Bernard Street, behind the Shore. By the end of the 17th century it had become known as the Timber Bush, and this name is still in use for the lane leading from Bernard Street into the area which was the site of the timber exchange.

GRAHAM SWIFT

COLINTON DELL

Date Saturday , 6th May
Leader Heather McHaffie

The first Saturday of summer 2000 found us at Colinton Dell for a fern and moss outing. We met at the bridge, but began our quest in Colinton churchyard where 3 species of Spleenwort were easily seen on the high wall: Wall-rue (*Asplenium ruta-muraria*), Maidenhair Spleenwort (*Asplenium trichomanes*) and Black Spleenwort (*A. adiantum-nigrum*. Heather mentioned that Wall-rue can tolerate much higher temperatures than most other ferns, something it has in common with the rare Forked Spleenwort (*A. septentrionale*) found in Holyrood Park, which requires surprisingly high temperatures for spore germination.

Someone had brought along a tiny heart-shaped prothallus with its young fern plant sprouting for us to look at it through a lens. A fern spore grows into a small flat plant about 1/2cm across known as a Prothallus. Sexual organs grow on the underside of the prothallus, and after fertilisation an embryo fern is produced which grows on the prothallus and is dependent on it during the early stages of life.

FERN PROTHALLUS

About 3x life size

Once into the Dell itself there were croziers unrolling everywhere. Broad Buckler fern (*Dryopteris dilatata*) came first, then lots of Hart's-Tongue (*Phyllitis scolopendrium*) on the slopes and along the path. Hard Shield fern (*Polystichum aculeatum*) was next; it grows where there is lime in the soil and its past year's fronds can be seen throughout the winter. Then came Common Male fern (*Dryopteris filix-mas*). Time was spent studying all these in some detail. The path was in shade and the east wind decidedly chilly, so we were glad to find some shelter in a hollow to eat our lunch only to be bothered by a boisterous dog..

Afterwards, Scaly Male fern (Dryopteris affinis) and Lady fern (Athyrium filix-femina) were added, along with Field Horsetail (Equisetum arvense) unusually with very few fruiting heads. Last came Common Polypody (Polypodium vulgare) and perhaps the Intermediate Polypody (P. interjectum), too.

That really left Heather time only to point out a few mosses in passing. She had planned to take us elsewhere for these, but hopefully a further excursion can be arranged next year.

Along the way we had seen and heard Dipper, Blackcap, Chiffchaff, Blackbird, Robin, Wren, Song Thrush, Dunnock and a Grey Wagtail. An Orange Tip butterfly was seen and a Morel and St. George's mushroom were also found.

JEAN MURRAY

OLDHAMSTOCKS CIRCUIT

Date Saturday, 13th May
Leader Margaret Watson

Very different weather from the rain and mist of 2 years ago welcomed the 19-strong party which set off on a 'by request' repeat of this circular walk through the Lammermuir foothills. We strolled in sunshine through this attractive Conservation Village, stopping to look at the Millennium Tree which had been planted in the village green. This was a Pin Oak, one of the American Scarlet Oaks, with dissected leaves (not yet unfurled in this specimen) and bright autumn colouring.

Turning on to the path past the Mill House, we found the vegetation part natural part cultivated - banks of Sweet Cicely (Myrrhis odorata), Dog's Mercury (Mercurialis perennis), Ramsons (Allium ursinum), Bugle (Ajuga reptans) were interspersed with daffodils and rockery plants, and ornamental cherries blossomed side by side with Geans (Prunus avium). Near the ruins of the mill, a bush of the old single-flowered Kerria was in flower, in contrast with the much commoner double variety we'd seen at the top of the garden. A marshy area contained Himalayan Balsam (Impatiens glandulifera) and Lady's Smock (Cardamine pratensis), and Parsley Water Dropwort (Oenanthe lachenalii) was growing by the footbridge where we crossed the burn. There was a lot of birdsong in this wooded area, with Willow Warbler, Chiffchaff and Blackcap adding to the familiar sounds from Robin, Blackbird, Chaffinch and Wren.

Then came perhaps the toughest section of the excursion with the steep, zigzag ascent of the hillside up to Woollands Farm, with halts to admire the views, and to notice fur-filled fox-droppings on a grass tussock! Several species of grasses and sedges were found along this path. In the Pines beside The Woollands we had excellent views of a Goldcrest. A gradual ascent on farm-tracks followed, through cultivated fields, then pinewoods, with a short detour to a couple of small spring-fed ponds where we found, among other marsh plants, Great Reedmace (Typha latifolia) and Blinks (Montia fontana). A very large old dung-heap at the end of the farm-track produced a thriving colony of the Dung Roundhead fungus (Stropharia semiglobata).

We stopped for lunch near the head of Wallycleugh, with the heavy scent of Gorse around us, songs of Whitethroat and Skylark, and a few Green Plover and 2 pairs of Buzzards to watch. Some of the party went down to explore the cleugh itself, the south-facing bank of which had a fine display of late-flowering Primroses, and returned to report finding Wood Horsetail (Equisetum sylvaticum), Lemon-scented Fern (Oreopteris limbosperma) and Hard Fern (Blechnum spicant).

Onwards by field edges to Crowhill, where we were dismayed to see the extent of gale damage to the woods where, on our previous trip, we had admired the beautiful display of male flowers on Firs, Pines and Larches. Now, very many of the trees had been uprooted or snapped off, and the remainder were looking bedraggled and sickly. We found flowers on only a few Spruce and Noble Fir.

The highest point of the walk was through flocks of sheep and their lambs to Sisterscleugh, from where we made a steep rough descent beside the burn. Plenty of Lady's Smock (Cardamine pratensis), Ragged Robin (Lychnis flos-cuculi), Celandine (Ranunculus ficaria) and Kingcup (Caltha palustris) to be seen, along with Creeping and Meadow Buttercup (Ranunculus repens and R. acris) with Thyme (Thymus polytrichus) and Fairy Flax (Linum catharticum) on stony path and banks. The ground now was very dry underfoot, but when we reached, via Yearn Hope, the main valley of Oldhamstocks Water, the results of extensive flooding in recent weeks were only too obvious. This year's heavy rains had been amongst the worst on record; vegetation had been well-scoured from stream-bed and banks, and we found nothing of unusual botanical interest here. A Cuckoo was heard in the far distance, and Willow Warblers and Yellowhammers were seen. Despite the fine day, there were disappointingly few butterflies about, mostly Green-veined and Large Whites, Meadow Browns, and the occasional Tortoiseshell. One member of the party found an Oil Beetle.

The ascent up to Oldhamstocks Church was through banks studded with Green Alkanet (Pentaglottis sempervirens) and Rough Chervil (Chaerophyllum temulum) and to round off a very pleasant 5-mile ramble, we explored the churchyard looking at the 'Watchhouse' erected in fear of bodysnatchers, and for the trade symbols on some of the oldest gravestones.

MARGARET WATSON

EAST LINTON

Date Saturday, 20th May
Leader Mary Robertson

This is a popular walk along the banks of the River Tyne. The day was pleasant, becoming cloudy and dull in the afternoon, but no rain fell until we were ready to go home. From the bridge, Station Road, we took the public path leading to the river where there was ample evidence of severe flooding following the April downpour.

Late spring and early summer flowers soon produced a long botanical list. Trees in leaf made it difficult to see the many birds in full song: Willow Warbler, Chiffchaff, Blackcap and Yellowhammer, for example. Mary Clarkson remembered finding Purple Toothwort (*Lathraea clandestina*) on a previous visit and when she made for an old Willow root, there it was! Several Orangetip butterflies, Green-veined Whites and St. Mark's Flies were seen.

We had lunch at Hailes Castle. In the vicinity we found Meadow Saxifrage (*Saxifraga granulata*), Dusky Cranesbill (*Geranium phaeum*) and Small-flowered Cranesbill (*G. pusillum*) growing at the foot of one of the castle walls, untouched by weedkiller applied round the corner. Swallows flew in and out of the building and Goldfinches tinkled in an old Sycamore.

We returned to East Linton by the minor road on the other side of the river. It was quite windy by now, so no birds were seen on the Gorse scrub, but there was a lovely old Hawthorn hedge in full flower - a rare sight these days.

As it was early afternoon the group decided to visit Smeaton Arboretum where there are interesting (and named!) old trees, scented Azaleas and Rhododendron species. By chance the owner came along, from whom we learned many things about the plantings and the recent theft of three Monkey Puzzle saplings (*Araucaria araucana*) donated by the Royal Botanic Garden for research purposes.

Beside the lake we found Skunk Cabbage (*Lysichiton americanus*) and for the first time I met Abraham, Isaac and Jacob (*Trachystemon orientalis*), a member of the Borage family. On a damp rock face we found the tiny white-flowered Sandwort (*Arenaria balearica*) - how did it get there? A few of us heard the 'fishing reel' call of the Wood Warbler, unusual for East Lothian.

MARY ROBERTSON

NEWLISTON HOUSE, KIRKLISTON

Date Wednesday, 31st May
Leader David Adamson

Late last year the local Fungus Group had a very rewarding visit to Newliston Estate near Kirkliston, finding the rare Dog Stinkhorn (*Mutinus caninus*) among other species. Although the NATS visit at the end of May produced few fungi species, the weather conditions differed little from the aforementioned visit, being very overcast and with some rain at the outset. The visit was arranged by courtesy of the MacLachlan family, whose forebears had acquired the estate from the Earl of Stair in the eighteenth century. The family name had been Hog, and 2 statues of wild boar flank the 1792 Adam mansion. To the east of the house is a rectangular wood, crossed by paths to form the design of the Union Jack. This was planted by the second Earl of Stair, a Field Marshal, to commemorate his successful participation in the Battle of Dettingen (1743). To the west are a Lime avenue, walled garden and some 300 year old Sweet Chestnut trees that were planted near an earlier house, which was demolished when the present one was built. To the north is a series of linear ponds, one falling into the next in an easterly flow, and the circuit of the miniature railway manned by enthusiasts every Sunday in May. The south has a large, unimproved pasture, full of Bulbous Buttercup (*Ranunculus bulbosus*) and Pignut (*Conopodium majus*) with scarcely a blade of Perennial Rye Grass to be seen.

In our leisurely circuit of the grounds we were fortunate to see a spectacular display of Dryad's Saddle (*Polyporus squamosus*) fungi growing on felled logs. The damp conditions had helped them grow to dish aerial size and they seemed very light in the dark conditions. A ragged winged Buzzard flew reluctantly from a branch at our approach. A Roe Deer was disturbed and seen by some of the botanists in the wake of the main group. There was a solitary Brown Hare in the south meadow and a frog, several geese and some Tufted Duck on the linear ponds. Apart from midges we found very few invertebrates, and the botanical highlights were mainly arboreal, being (we think) Manna Ash (*Fraxinus ornus*), Broad-Leaved Lime (*Tilia platyphyllos*), a miniature umbrella- shaped Tsuga sp and the obligatory Giant Redwood, Dawn Redwood and some ancient Sycamores. I think everyone would like to revisit the estate on a sunny day. The house and grounds are usually open during May only, Wednesday to Sunday from 2 - 6pm.

DAVID ADAMSON

BIRNIE LOCH, LOCHORE

Date Saturday, 3rd June
Leader Jim Stewart

Just beyond Auchtermuchty are two man-made lochs. They were dug out for their sand and gravel. Now they have been landscaped and have become a wetland site. Birnie Loch had over three thousand native trees planted around it in 1990. When Gaddon Loch was created in 1996 the site more than doubled in size.

In former years Black-headed Gulls nested on the two islands in Birnie Loch but grass has grown tall and the site is no longer suitable for their nests. However Mute Swans have nested and are rearing their young. Gaddon Loch is more open than Birnie Loch, being younger, and birds seen included Reed Bunting, whereas at Birnie, though Willow Warbler and Sedge Warbler were heard they were not seen.

After lunch we drove south to Lochore Meadows and during a short walk in the Nature Reserve there, we watched Great Crested Grebe and several types of wildfowl.

MOLLY WOOLGAR

In a grassy area at the end of Gaddon Loch we saw masses of crysalides of Six-spot Burnet Moth but it was too early for any moths to be flying. An interesting plant was spotted, in structure very like Fox-and-Cubs (*Pilosella aurantiacum*) but with yellow flowers. It was Yellow Fox-and-Cubs (*Pilosella caespitosa*) a garden escape which seemed to be well established along one side of the reserve.

LYN BLADES

GLENRATH

Date	Saturday, 10th June
Leaders	Eric and Eileen Perry

Glenrath is an offshoot of the Manor Valley near Peebles. There is a farm at the mouth of the Glen and from there a two mile rough track leads to Glenrathope at the head. Beyond are the hills. Fine weather and impressive surroundings guaranteed an enjoyable outing and this was enhanced by the help and encouragement of Mr. Campbell, the landowner, and Mr. and Mrs. McKay of Glenrathope who invited us to picnic at their home and to make use of all facilities. As a mark of our appreciation we will present to them a full report showing what we found in the Glen. We also owe a debt of gratitude to Jackie Muscott for compiling that full list and also for the outing report which follows:

In general terms, the marshy areas were very interesting with a good mix of common sedges and rushes plus Lousewort (*Pedicularis sylvatica*) and the leaves of the insectivorous Round-leaved Sundew (*Drosera rotundifolia*), Bog Asphodel (*Narthecium ossifragum*) (they are like small Iris leaves) and the beautiful Grass of Parnassus (*Parnassia palustris*). There were also leaves of Marsh Violet (*Viola palustris*) - they are very distinctive, almost round - and after some searching we eventually found a flower.

In the damp areas was also the easily recognisable little Changing Forget-me-not (*Myosotis discolor*). It has a distinctly 'fiddleneck' spike and the flowers are bright yellow when they first come out, turning blue later.

The drier banks had heathy plants like Heather, Bell Heather, Bilberry, Tormentil, Heath Bedstraw and the rather attractive little Milkwort (*Polygala serpyllifolia*). It has spikes of small flowers with a curious arrangement of petals and sepals. It is most often deep blue, but sometimes pale blue, white or pink.

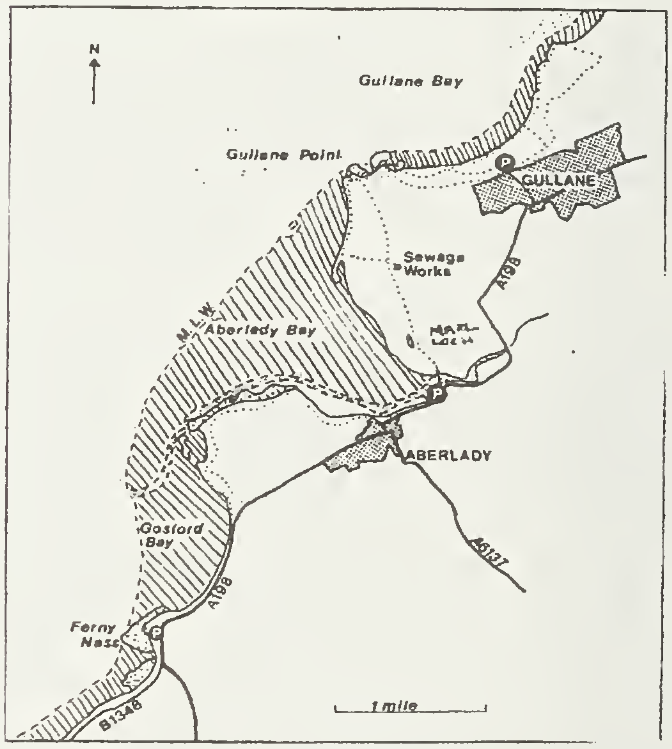
There were some lovely coppery Monkeyflowers (probably *Mimulus x burnettii*) in the river. Monkeyflowers were first introduced from N. & S. America early in the 19th century and soon escaped. Now they make a colourful addition to our riverside flora. In comparison the New Zealand Willowherb, introduced at the end of the l9th century, has crept up our rivers right into the highlands, almost unnoticed. It is generally found in damp gravel by streams. Two rarities were discovered: Starry Saxifrage (*Saxifraga stellaris*) and Hairy Stonecrop (*Sedum villosum*).

In addition to the expected birds were Merlin, a pair of Black Grouse and an Oystercatcher's nest. We saw frogs and heard grasshoppers (quite early I think). The Small Heath butterflies were early too. They apparently usually start emerging in mid-May. The sedges were well on too. I think the valley must be very sheltered and sunny.

ERIC AND EILEEN PERRY AND JACKIE MUSCOTT

ABERLADY BAY

Date	Saturday, 17th June
Leader	Mary Tebble



Aberlady Bay was the first Local Nature Reserve in Britain, designated as such in 1952 because of its rich maritime flora and its geology, and because it is a 'hot spot' for birdlife. It has saltmarsh, sand dune, grasslands, open freshwater, scrub and mixed woodland habitats that support a wide range of plants and migrant and breeding birds.

Seventeen of us met to explore the Reserve. Even before crossing the wooden bridge (Nigel Tranter's 'Bridge to Enchantment') we found interesting saltmarsh plants. The beautiful little Sea Milkwort (*Glaux maritima*) was prolific and Greater Sea-spurrey (*Spergularia media*) was in bloom. We were able to compare the spikes of Sea Plantain (*Plantago maritima*) with those of Sea Arrowgrass (*Triglochin maritima*), easily confused. Jackie Muscott showed us how attractive the flowers of Saltmarsh Rush (*Juncus gerardii*) appear under a lens.

Walking on, we saw swathes of Meadowsweet (*Filipendula ulmaria*) in bud beside the path and Marsh Marigold (*Caltha palustris*) in the wet ditches.

Ragged Robin (*Lychnis flos-cuculi*) dotted the marsh with pink and, on one bank, White Bryony (*Bryonia dioica*) sprawled with several clumps of Black Horehound (*Ballota nigra*) nearby.

Before reaching the Marl Loch, spikes of Northern Marsh Orchid (*Dactylorhiza purpurella*), plentiful all over the reserve, and Field Mouse-ear (*Cerastium arvense*) were seen near the path, to which we kept because of nesting birds. We heard and saw Reed Buntings, Skylarks and Meadow Pipits. The yellow starfish rosettes of Butterwort (*Pinguicula vulgaris*), with their long-stalked violet flowers, and Quaking Grass (*Briza media*) were found down an accessible side path, with leaves of Bog Pimpernel (*Anagallis tenella*). Bur Chervil (*Anthriscus caucalis*) and Spring Beauty (*Claytonia perfoliata*) edged the path liberally along the arcade of Sea Buckthorn (*Hippophae rhamnoides*), with a few plants of Fiddleneck (*Amsinckia micrantha*) near its turn. On the Marl Loch island, female Eider rested, with a Moorhen swimming nearby.

Our expert botanists identified twelve of the reserve's twenty-two recorded sedges and four different Horsetails. One flower of Greater Bladderwort (*Utricularia vulgaris*) was seen with Bogbean (*Menyanthes trifoliata*) and Marsh Lousewort (*Pedicularis palustris*) in a wet area.

Amid the short turf near the sewage works we found Moonwort Fern (*Botrychium lunaria*), and almost sat on more as we ate our lunch. On the far east of the reserve we found over five hundred more plants; so it is not as scarce as we thought. Purple Milk Vetch (*Astragalus danicus*) was plentiful, and the glorious blue spikes of Viper's Bugloss (*Echium vulgare*) were greatly admired.

After lunch, we found more orchids near another marshy pool: the ruby-red Early Marsh Orchid (*Dactylorhiza incarnata ssp. coccinea*) and its flesh-coloured form (ssp. *incarnata*) with Twayblade (*Listera ovata*) in a drier area. Later, Helen Jackson found a single Frog Orchid (*Coeloglossum viride*) in flower elsewhere, and confirmed Jackie Muscott's Common Spotted Orchid (*Dactylorhiza fuchsii*).

Some of us walked along the beach to Gullane Point. We found a Heart Urchin or Sea Potato (*Echinocardium cordatum*), Banded Wedge Shells (*Donax vittatus*), Horse Mussels(*Modiolus modiolus*) and Otter Shells (*Lutraria lutraria*) washed up.

Helen Jackson pointed out the rare Sea Fern Grass (*Catapodium marinum*) growing on rocks near Gullane Point and Stuart Maxwell made history by recording one plant of Adder's Tongue (*Ophioglossum vulgatum*) in the dunes, a first record for the Aberlady Nature Reserve. On the 25th June I found eleven plants of this on another path on the Reserve.

We all returned safely to our cars, having enjoyed our day on this wonderful nature reserve. Not many birds had been seen, as waders are breeding elsewhere at this time, but flowers were in abundance.

MARY TEBBLE

ROYAL BOTANIC GARDEN, EDINBURGH

Date Wednesday, 21st June
Leader Geoffrey Harper

Since the NATS last visit to the Botanics on 1st June 1994 considerable changes have taken place, not least in the areas of particular interest on this occasion - those with Scottish plants.

On the way to the Ecological Garden on the north side, we paused for the intellectually stretching part of the evening - examining a Beech *Fagus sylvatica* 'Asplenifolia', to discover why it is so called. The leaves are pinnately lobed, but this particular tree - fortunately for us - has two branches which turn back on themselves, evidently the result of damage. These have leaves which have partially reverted to normal Beech foliage. Var. 'Asplenifolia' is in fact a chimaera: the leaves consist of a 'sandwich' of normal Beech tissue surrounded by a layer of mutant cells, and the stems have a similar construction. Where the balance between the two types of tissue is upset, such as in a damaged bud, a different leaf shape may result, involving partial or complete 'reversion to type'.

The trees in the Ecological Garden are growing fast, so that each year it comes to resemble a bit more closely the planned mosaic of different native woodland types. There are also acid and calcareous grassland, and a pond sporting white and yellow Water Lilies, Bogbean, Irises and sedges. Regrettably no sand dune, saltmarsh or peatbog are represented, though a gesture towards the bog is to be found in the new Scottish Heath Garden.

On our way there we stopped off at a stone trough on the Alpine House patio, where Scottish Primrose (*Primula scotica*) flowered well earlier, while Mountain Avens (*Dryas octopetala*) and Yellow Oxytropis (*Oxytropis campestris*) were still in bloom. This trough forms part of the Scottish Rare Plants Trail (leaflet available from the Botanics Shop), though some of the plants are being moved to the Ecological Garden. We also encountered en route, the non-botanical spectacle of Botanics staff running around the garden on a Fun Run.

The new Scottish Heath Garden occupies the south-east corner of the Botanics, adjacent to the Rock Garden. A central feature is a pitch-black lochan, which improves every year as the vegetation around it closes over. On our visit the Cotton Grass (two species) and Yellow Irises were spectacular. As in the case of the Ecological Garden, the Heath Garden represents the new approach to displaying plants - placing them in as natural a setting as possible as part of a particular type of vegetation, instead of arranging them in systematic groups or as merely decorative plantings.

GEOFFREY HARPER

BO'NESS

Date Saturday, 24th June
Leader Jackie Muscott

Bo'ness (Borrowstounness), the old port of Linlithgowshire, has long been associated with the coal industry. Apparently the monks of Holyrood Abbey first started digging coal out of the hillside and shipping it to Leith in medieval times. Later the trade expanded and coal from Bo'ness was transported to London in the south and Scandinavia to the north. A salt industry developed in parallel, the poor-quality coal being used to fire the salt pans, and the salt in turn was exported to London , Scandinavia and the Low Countries. Both the miners and the saltworkers effectively became serfs, being tied to their trades.

As the port developed, shipbuilding also became an industry, as did whaling later, and when the mining went underground Bo'ness became a centre for the import of wood for pit-props. Both iron and clay were to be found nearby and the coal was utilised at the nearby Carron Iron Works and the Bo'ness potteries.

The boatbuilding died with the advent of steam, and the saltmaking with changes in agriculture which reduced the need for salt meat. The potteries hung on until the 1960s, and the last of the pits, the Kinneil Colliery, closed in 1984. Now the bustling docks are empty, the Kinneil bing has been levelled, and the busy railway sidings replaced by the Kinneil Steam Railway, a tourist attraction.

It was here that 13 NATS met to look at the reclaimed bing and some of the waste ground beyond. It was a fine day when we set out, and though it threatened rain at lunchtime (when else!), it held off until late in the afternoon, by which time we had got ourselves ensconced in the local 'chippie' for a welcome cup of tea.

The reclaimed bing area is very attractive; it is now a wildflower meadow interspersed with clumps of young trees, so we were never without birdsong - Skylarks in the meadow and Willow Warblers in the trees. There was also quite a lot of insects. We saw many chrysalides of the 6-spot Burnet Moth, and a few recently-emerged Burnets, and butterflies included Meadow Browns and Ringlets, a few Common Blues, a single Small Copper and a Painted Lady. The latter is an immigrant butterfly which only occasionally gets this far north.

THE SIX-SPOT BURNET MOTH - newly emerged from Chrysalis

THE SIX-SPOT BURNET MOTH - spread out

The meadow must have been seeded, so the plants included a number which are rare in the Lothians but which are thriving here - Wild Carrot (*Daucus carota*), Kidney Vetch (*Anthyllis vulneraria*), Rough Hawkbit (*Leontodon hispidus*) and Hoary Plantain (*Plantago media*). In fact coal and oil-shale seem to be ideal as a basis for wildflower meadows: both are well-drained, quite base-rich, but poor in nitrates and phosphates, lack of which discourages the growth of nettles and other coarse vegetation.

Other plants were clearly self-set; in the damper areas 2 species of orchid, Northern Marsh Orchid (*Dactylorhiza purpurella*), just beginning to go over, and Common Spotted Orchid (*D. fuchsii*), just coming into full flower, and the hybrid between them *D. x venusta*; in the drier areas a good deal of Common Melilot (*Melilotus officinalis*) and some Vipers Bugloss (*Echium vulgare*). The latter is found in the Mediterranean and is at the northern edge of its range in Scotland, where it is found mainly on the east coast. However in the central belt it has also found a home on old coal bings.

Dry waste ground to the west of the reclaimed bing also had its rarities - Russian Cinquefoil (*Potentilla intermedia*) and Small Cudweed (*Filago minima*). The former is an introduced plant, and may well have come from Russia with the wood imported for pit props. It's a bushy, fairly upright Cinquefoil, to about a foot high, with small flowers, and leaves in 5 segments. The Cudweed is decidedly inconspicuous except when in the quantities seen here; anything from 2-15cms with a single spike, or branched near the top (and sometimes at the base), silvery grey with narrow leaves pressed close to the stem and tiny rayless yellow daisy flowers.

SMALL CUDWEED
Filago minima

Beyond the sea walls stretch rather unattractive mud flats, revealed at low tide, but these provide feed for seabirds, in particular for a large colony of Shelduck, resident all year round. Some saltmarsh plants are to be found by a deep channel which almost cuts off part of the reclaimed area at high tide. Here were Sea Plantain (*Plantago maritima*) and Sea Arrowgrass (*Triglochin maritima*) growing side by side for comparison, and a small succulent plant Glasswort (*Salicornia sp*.) which used to be burnt to produce salts used in glassmaking. It was also eaten fresh or pickled and was then referred to as Sea Samphire, a name derived from Rock Samphire (*Crithmum maritimum*), an unrelated plant, which was also pickled and eaten.

GLASSWORT

Salicornia sp

A Weasel amused us by threading its way through rocks beside this patch of salt water, and surprisingly a Tern was busy fishing in it. Other birds seen included various Gulls (Black-headed, Common, Herring, and both Greater and Lesser Blackback), while Swallows and Swifts flew overhead.

This old industrial wasteland has become a surprisingly rich and beautiful area, but if it's to retain the variety of habitat, it will need to be managed. Trees are already moving into the meadow, and without intervention the whole area will eventually become wooded. This will be fine for woodland birds, but not so good for butterflies like the Common Blue, or for the Skylarks, both of which are in decline in Britain.

JACKIE MUSCOTT

QUEEN'S PARK

Date Wednesday, 28th June
Leader Ranger

Holyrood Park is a fascinating place with so much geology, history and natural history; it is also a magnificent viewpoint to appreciate the layout of the city and the Firth of Forth. We were led carefully through the geology by the Ranger, helped by good visual aids to imagine 350 million years of tropical seas, volcanic eruptions, earthquakes and tiltings, erosion, glaciation and more erosion.

We looked at the effect of the landscape on the early history of the Park: the erratic which marks the site of St. Anthony's Well, a spring coming from groundwater trapped in a fault in the rocks (the water was said to cure St. Anthony's Fire (*Erysipelas*), a disease caused by eating bread infected by ergot, a fungus); St. Anthony's Chapel, built on a prominent crag of lava, to be seen by the seamen sailing up the Forth, to remind them of their duty to their patron saint; the Dasses, volcanic sills of felspar which form ledges which offered shelter for early inhabitants. A Short-eared Owl hunts here in winter.

We saw a Whitethroat and a Sparrowhawk and Bullfinches on Elders below the Gutted Haddie; and were told of the Fulmars which nest every year on Raven's Rock and on the crags overlooking Holyrood Palace. There was Hemlock (*Conium maculatum*) with its purple-blotched stem - poisonous from roots to seeds and smelling of mice when it's going over! There used to be Northern Brown Argus butterflies on Rockrose along the path which became Duddingston Road. The Rockrose is still around in the Park, but the butterfly whose larvae feed on it disappeared in the last half of the 19th century - perhaps partly as a result of the road building. Perhaps it will return; and so must we....

This was a most interesting walk, on an area that we take so much for granted. It has much to offer.

SANDRA STEWART

EAGLESCAIRNIE MAINS

Date Saturday, 1st July
Leader Michael Williams

A party of 14 was taken on a 1.5 km walk on this Lothians FWAG Demonstration Farm by the owner and farmer, Mr Michael Williams. An ex-army officer, Mr Williams took over the running of the farm some 15 years ago. His aim is to integrate successful, profitable modern farming with sympathetic conservation practices.

Walking along the edges of the fields, the basic principles were explained. The hedges bordering all of the arable and pasture fields provide the core of the conservation strategy . Much of the hedging is new, planted with grant-aid, to include all of the older, open-gapped hedges, having been planned on a grand scale. Some two metres in width they have been planted up in lavish style with 10 bushes and trees to the metre. There is a variety of species from Rose, Hawthorn, Blackthorn and Hazel to Ash and Oak, with a flourishing undergrowth of grasses and wild flowers. The hedges will eventually be trimmed every second year in an A-shaped pattern to a height of 2-2.5 metres. This will provide cover and food for small birds and invertebrates throughout the year.

Outwith the hedge is a two metre mown grassland strip which suppresses arable weeds such as Barren Brome and Cleavers (or Goose-grass) and will allow easy passage for a 4-wheel drive. Then comes an eight metre wide 'endrigg' or conservation strip. Although part of the crop of winter wheat or spring barley, this is left untreated when the main crop is chemically sprayed in the normal manner. This good varied hedge, with 10 metres of weed seeds and insects on both sides, will provide a sanctuary for butterflies and other insects, and such decreasing bird species as Partridge, Yellowhammer and Song Thrush. A large area of set-aside is given differing treatments each year but is basically wild grasses with assorted bird food. It is cut annually and the cuttings left on the ground.

Tree planting has been on a large scale. All of the 'awkward' field corners have been smoothed out and planted up to trees. This means that agricultural machinery does not have to stop and reverse into a corner but can keep going around a bend. In a short morning's walk we were only able to cover a small part of the farm. Outwith this there is one large area of semi-natural ancient woodland, which has been upgraded. Many shelterbelts and smaller areas of trees have been planted - in total some 16,000 hardwoods including 1,000 Oaks. These will be treated as a harvestable crop in future years. A pond, redug several years ago, is now again becoming overgrown and requiring further treatment. It is hoped, in the future, to dig another pond in the 'wetland area' - a low-lying part of the ancient woodland. On another area of set-aside there is a wildflower meadow. Among the few species noted flying were Buzzard and Ringlet butterfly. After lunch there was an opportunity to explore the many other parts of this very unusual and fascinating farm.

BOB SMITH

WILDLIFE SEEN ON OUR WALK AROUND EAGLESCAIRNIE

Chiffchaffs called and Whitethroats and Blackcaps sang during our walk. We saw a Buzzard and a Sparrowhawk and many Goldfinches and Yellowhammers. Near the farm buildings a Painted Lady butterfly flew and Blue Sowthistle (*Cicerbita macrophylla*) was in flower. On the car park, Cut-leaved Cranesbill (*Geranium dissectum*) and at the field edge, delicate Corn Spurrey (*Spergula arvensis*) flourished. We saw many Ringlet butterflies.

We were told that only two pairs of Grey Partridge had bred successfully this year as it was quite cold and bad weather kills them during their first eight days of life.

By the pond there were plants of Yellow Iris (*Iris pseudacorus*) and a stand of Branched Bur-reed (*Sparganium erectum*) in the water, as well as Russian Comfrey (*Symphytum x uplandicum*) and Wood Avens (*Geum urbanum*) in the surrounding woodland.

After lunch, we walked to the Wildflower Meadow along a tarmac road edged with a wide verdant verge decorated with over three hundred spikes of Common Spotted Orchids (*Dactylorhiza fuchsii*). The Wildflower Meadow was in full bloom with a Red Admiral butterfly hawking over it. Thirty-four different species of flowering plants were counted on the east side of the field where we walked, most of them common flowers, with Tufted Vetch (*Vicia cracca*) and Ox-eye Daisy (*Leucanthemum vulgare*) prominent. The farmer said he would be interested to know what we had identified, so our list of species seen there has been sent to him. The meadow had been sown with a FWAG (Farm Advisory Group) wildflower mixture sometime before 1994.

We enjoyed our walk around Eaglescairnie Mains and were very impressed by Mr. Williams's conservation policy carried out since 1986 when he took over the running of the family partnership and developed this FWAG Demonstration Farm.

MARY TEBBLE

NEWHAILES ESTATE

Date Wednesday, 12th July
Leader Eunice Smith

On our evening visit to the grounds of Newhailes House near Musselburgh we were pleased to be joined by some local people who walked regularly in the area. Work on the house and gardens is well under way but the grounds are now usually open to the public. A new National Trust for Scotland Ranger was due to be appointed around the time of our visit and the gatehouse now has an occupant. A car parking area has been created just inside the main gate in order to cope with all the construction vehicles now attending the site. The impressive pillars at the entrance to the area in the front of the house have been removed to storage in order to avoid further damage to them while the restoration of the house is taking place.

As we walked around the grounds, we noted the usual permanent features of the Shell Grotto, the Tea House and the Earl of Stair Monument with its Latin inscription. The house has been in the ownership of the Dalrymple family for two centuries, and mention was made of the interest in mushroom cultivation by Christian Dalrymple in the 19th Century. This interest is believed to be documented in the `Dalrymple Papers' which are lodged in the National Library of Scotland. In more recent times there has been a mushroom `farm' on the estate (managed by a local man). Present-day wild fungal growth was detected and the artist in our company took home a specimen of the Artist's Fungus (*Ganoderma* sp.). One of the really beautiful specimens found was that of The Chicken of the Woods (*Laetoporous sulphureus*). It was growing in layers on the end of a cut stump. We all had a good sniff at it and eventually decided that the smell was that of the base-plate of a domestic iron after cleaning fluid had been applied to it! (Look to your laurels Oz Clarke and Jilly Goolden!).

Later, as we entered the open field area, the expanding umbrella-type net food-cover carried by the leader and the `Bug-box' supplied by Patrick, the youngest member of the group, were put to good use. Using them we were able to get a close up view of one of the Yellow Shell moths (*Camptogramma bilineata*) which were flitting around. The moth was trapped under the cover and then transferred carefully to the `Bug-box' where, with either the naked eye alone or with the aid of a magnifying hand lens, it was then possible to see the beautiful markings of the small moth. It is important to keep the box still and out of bright light in order to reduce the movement of the creature, as excessive movement will lead to the loss of scales as the moth flaps against the sides of the box. A larger moth, the Small Magpie (*Eurrhypara hortulata*), was also observed. The Small Magpie has a very bright yellow patch near the head and the main part of the wings is pure white with dark markings.

One of the highlights of the evening was drawn to our attention by the local people - they had been making regular visits to the grounds waiting for the Martagon Lily (*Lilium martagon*) to come into flower. We were fortunate as it was indeed in full bloom. The scent of this was so complex that it defied identification - even from the `noses' who had triumphed earlier in the evening. The Martagon Lily was introduced to gardens in this country towards the end of the 16th century. Although found occasionally further south (in England) it is rarely found in northern climes. It will be interesting to see if the current research on the garden planting will yield any record of its introduction to the estate.

As usual on our visits the answers we found lead us (yet again) to at least one other question.

EUNICE SMITH

RED MOSS to HARLAW

Date Wednesday, 19th July
Leader David Adamson

This outing was originally intended to be a hill walk, but only one member took to the hills, having arrived by tradition a bit late and missed the main party. In the event, a circuit of the SWT boardwalk on Red Moss reserve, followed by a circuit of Harlaw Reservoir, occupied 2½ hours of a glorious summer evening. At times the low sun produced light conditions that photographers use for calendar covers.

Red Moss and Harlaw contrast with the overgrazed hills in the lushness and diversity of their plants and fungi. True, Red Moss is very acidic, being a raised peat bog some 5 metres deep and dominated by Birch, Heathers and Sphagnum. Under the Birches were Yellow Swamp Russula (*Russula claroflava*) and two *Amanita* species - *Amanita rubescens* and *A. vaginata*.. Broad Buckler fern (*Dryopteris dilatata*) was at home in the shadier parts of the moss, while the smaller and paler Upright Buckler (*Dryopteris carthusiana*) fringed the small pond at the west end of the boardwalk. Where mortar had leached from a wall, the less acid conditions allowed Herb Robert (*Geranium robertianum*) to grow. On the surface of the sphagnum itself, the red patches were groups of insectivorous Sundew (*Drosera rotundifolia*) with its insignificant white flowers. Crossing the road towards Threipmuir, we found innumerable small ladybird caterpillars on Willow leaves. Marsh Ragwort (*Senecio aquaticus*) with its large yellow flowers, and Ragged Robin (*Lychnis flos-cuculi*) were at their best in the ditches and damper areas. On we walked past Threipmuir to the first indicators of slightly alkaline conditions - Yellow Rattle (*Rhinanthus minor*), Fairy Flax (*Linum catharticum*) and Eyebright (*Euphrasia* sp) together with the sedge *Carex flacca*.. Harlaw, the smaller compensation reservoir, is fringed with conifers, its banks much drier than the Red Moss. However, there were Chantarelle *Cantharellus cibarius* and some Larch Bolete *Suillus grevillei*, as well as Lemon-scented Fern (*Oreopteris limbosperma*) and Sneezewort (*Achillea ptarmica*), all thriving. One of our party, who had walked across the Pentlands to meet us, left at Harlaw to retrace his steps before darkness set in.

On our return to the car park we met the hillwalker who had an account to tell of her own interesting adventures in search of the main party. However, lack of space allows publication of only one report on the outing.

DAVID ADAMSON

RIVER NORTH ESK, CARLOPS

Date Saturday, 22nd July
Leader Mike Jones

The weather was dull but warm when the party assembled at Carlops, ready for a walk up the River North Esk to the Fairliehope Burn and beyond, under the expert guidance of Mike Jones and 3 lively sheepdogs (one, amazingly, aged 16).

The trip involved several fence and river crossings, one of which caused some consternation as a member of the party, having successfully negotiated the fence, misjudged the slope behind, and took a backwards dive towards the river. Weighed down as she was by her rucksack, it took some time to extricate her, but only the rucksack got wet.

The Fairliehope Burn itself was too difficult to negotiate, but Mike guided us to a variety of areas of botanical interest. He knew exactly what was where, and among us we usually managed to find the rarities he mentioned, even when they were not in flower.

Marsh Valerian (*Valeriana dioica*) was one of the rare plants, growing in a little flush. It has an attractive flower and is like a miniature Common Valerian except that the basal leaves are oval, quite unlike the stem leaves, which are pinnately lobed. The Common Valerian (*Valeriana officinalis*) was also to be found in marshy areas, while the Pyrenean Valerian (*Valeriana pyreniaca*) was growing by the roadside in Carlops, completing the trio.

MARSH VALERIAN
Valeriana dioica

Valeriana dioica is at the northern edge of its range in Scotland, as is *Leontodon hispidus*, the Rough Hawkbit, a lime-lover and quite a surprise in this habitat.

Alpine plants seen, all rare in the Pentlands, included Mountain Everlasting (*Antennaria dioica*) which likes dry banks; Stone Bramble (*Rubus saxatilis*) found under scrub; and Alpine Bistort (*Persicaria vivipara*), Globeflower (*Trollius europaeus*) and Lesser Clubmoss (*Selaginella sellaginoides*) which all like damper areas.

None of these plants was in flower, but patches of colour were provided by Wild Thyme (*Thymus polytrichus*), Bell Heather (*Erica cinerea*), Birdsfoot Trefoil (*Lotus corniculatus*), Red and White Clover (*Trifolium pratense*, *T. repens*), Eyebright (*Euphrasia spp.*), Self Heal (*Prunella vulgaris*) and Buttercups and Daisies. The wet areas provided plenty of opportunity for identifying sedges and rushes, but also colourful patches of Meadowsweet (*Filipendula ulmaria*), Ragged Robin (*Lychnis flos-cuculi*) and the odd late flower of Cuckoo Flower (*Cardamine pratensis*).

As the day progressed the weather improved and by lunchtime the sun was shining, grasshoppers were chirruping and a variety of butterflies were on the wing. A rather comatose Common Blue was noted early on, but Green-veined Whites, Small Heaths and Meadow Browns were soon flitting about.

The Ringlet and Small Tortoiseshell also put in an appearance, as did a number of Chimney Sweeper moths. These are small day-flying moths, black with a touch of white on the tip of the wing.

CHIMNEY SWEEPER MOTH

Curlews and the inevitable Oystercatchers were both seen and heard, as were Common Sandpipers by the reservoir. Swallows and Martins were flying overhead, so were various birds of prey: Buzzards and Kestrels were definitely sighted, and possibly a Peregrine Falcon. No mammals were seen, but our attention was drawn to some Otter spraint by the side of the burn; it's nice to know the animal is around.

Despite all the fences the party was anxious to continue once we reached the North Esk reservoir in the hope of seeing Moonwort (*Botrychium lunaria*). Apparently over 100 spikes had been noted earlier, but we were only able to find 3. Vegetation was of course rather taller than a month ago, but had also been grazed - and I suspect Moonwort is quite a tasty morsel if you're a sheep!

MOONWORT
Botrychium lunaria

JACKIE MUSCOTT

NORHAM

Date Saturday, 5 August
Leader Duncan Gill

This day was perfect for meandering along the banks of the river Tweed. It was warm with a gentle breeze and high cloud tempering the sun.

The group assembled by Norham Green, with the castle in the background. The ancient association with the monks of Lindisfarne was discussed, along with the part played by Norham in the choice of succession to the Scottish throne in the late thirteenth century. The story of Marmion in Scott's poem had connections with Norham Castle.

A path through the kirkyard led us down to the Tweed. We were met by a high steep bank clothed on the opposite side in Giant Hogweed (*Heracleum mantegazzianum*). Although numerous, the plants were relatively small as the area had been grazed by sheep. Giant Hogweed appeared regularly on our stroll and towards the end it lived up to its name with numerous plants of 10 feet or more, giving the area a jungle feeling. The river bank carried much Himalayan Balsam (*Impatiens glandulifera*), Russian Comfrey (*Symphytum x uplandicum*) and Great Willow-herb (*Epilobium hirsutum*) interspersed with Tansy (*Tanacetum vulgare*), Meadow Cranesbill (*Geranium pratense*), Welted Thistle (*Carduus crispus*), Hedge Mustard (*Sisymbrium officinale*) and seeding plants of Dames Violet (*Hesperis matronalis*). Creeping Jenny (*Lysimachia nummalaria*) lurked at the foot of a stile with Yellow Loosestrife (*Lysimachia vulgaris*) at the nearby water's edge.

The path continued, now on the north bank of the Tweed, through pastures and adjacent to parkland in the estates of Ladykirk and Milne Graden. Lunch by a fishing shiel proved to be adjacent to a Sand Martins' tenement. Buzzards had been spotted at the start of the walk and the river had the usual family groups of duck and Mute Swan along with the occasional Grey Heron, Common Sandpiper and Oystercatcher. It was good to see a sizeable flock of Lapwings and on the water, a flotilla of Goosanders.

Other plants encountered during the walk included Black Horehound (*Ballota nigra*), Creeping Cinquefoil (*Potentilla reptans*), Restharrow (*Ononis repens*), Prickly Lettuce (*Lactuca serriola*), Marjoram (*Origanum vulgare*), Green Alkanet (*Pentaglottis sempervirens*) and Creeping Yellowcress (*Rorippa sylvestris*).

Prior to the Ladykirk - Norham bridge, built in 1886, Norham fords were an important river crossing place. We kept a lookout but were unable to recognise any evidence of them.

DUNCAN GILL

Footnote: The Lettuce was in fact the very similar but much taller Great Lettuce (*Lactuca virosa*) mentioned in the Berwickshire checklist. Besides Creeping Yellowcress, there was also Marsh Yellowcress (*Rorippa palustris*) and it was interesting to compare the flowers and fruit of the two plants. JM

RAVELSTON WOOD and QUARRY

Date Wednesday, 9th August
Leader Elizabeth Farquharson

Before 1400, there were many small quarries scattered around Edinburgh which were well able to meet the building demands of the day. However, because of the devastation caused by fires in the many wooden buildings of the City, a law was passed in 1425 enforcing the greater use of stone. The increase in demand could not be met by the many small quarries, and before long, larger quarries were established. The principal ones on the West side of Edinburgh were Craigleith, Maidencraig, Redhall, Hailes, Barnton Park and Ravelston.

Craigleith Quarry was one of the largest and was not closed until 1941. In its day it supplied stone to Edinburgh Castle, Holyrood Palace, the University Old College and buildings on Calton Hill. There is a large fossilised tree trunk standing in the grounds of the Natural History Museum in London which came from Craigleith. Following its closure and after infilling, a large shopping complex was built on the site.

Maidencraig Quarry lay between Craigleith and Ravelston Quarries. It was smaller than its neighbours and closed down after flooding in 1855. It is now a residential area.

Ravelston Quarry was situated in the wooded hill area just behind Ravelston House. When the house and grounds were purchased for The Mary Erskine School, the woodland and quarry were not included in the sale and passed into the hands of developers. Quite recently houses have been built in one small area and the woodland now belongs to the City.

The evening walk started at the Lodge Gates on Queensferry Road and more or less opposite the site of Maidencraig Quarry. As we walked along the old driveway towards the back of the house, members were asked to try to sort out some of the past history. Had there been small quarries on either side of the road before the big quarry was established? Was much of the soil in this area due to dumping when houses were being built? And were the trees planted or self-planted?

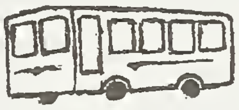
From the back of the house we followed one of the wider tracks, all the smaller ones, of which there are many, being heavily overgrown with bracken and brambles. This led to a small stretch of old track running roughly north-south with a planted line of trees separating the track from a precipitous drop into one of the quarried sites. It was difficult to link up this track either to the house or to other driveways. Close to the track, but at a lower level is an ice-house, in good condition but so heavily swamped by ivy that it is not easily seen.

Until fairly recently one could scramble down into the quarry but the area is dangerous, with steep drops, and safety fencing now makes access difficult. Infilling was incomplete so the site still has a pond. A pair of Grey Wagtails is seen there every spring. Stone from this quarry was much in demand and records show that it went to Holyrood in 1530, to St. Giles in 1590, to Stirling Castle in 1625, and to Parliament House in 1632. In 1825 activity finally ceased but a second quarry on the other side of Ravelston Dykes Road continued to a later date.

The families who owned the quarries must have been wealthy for the demand for good quality stone extended their trade to London and overseas, but life for the quarrymen must have been hard and dangerous. The only reference to ill health so far found has been a recommendation in 1852 for the men to grow beards and moustaches to filter out the dust!

ELIZABETH FARQUHARSON

WANLOCKHEAD



Date Saturday, 12th August
Leader Janet Watson

A cheerful party set off by bus to visit Wanlockhead, claimed to be Scotland's highest village at 1500 feet, although Tomintoul disputes this as its main street is higher than Wanlockhead's, but Wanlockhead does have the highest house. The idea was to visit the old lead mine and see the heritage of the mining village and also to pick Cloudberries. One can still pan for gold there, but no-one tried that. The day was cloudy but dry until we reached Wanlockhead itself, where it was raining.

We required to divide into two groups to enter the Lochnell lead mine wearing our hard hats. Lead ore was probably mined in the area as early as Roman times and the mining of galena had become the main occupation of speculators by the late seventeenth century, but ceased in Wanlockhead in the 1930s. We went in a considerable distance horizontally and were able to look down a vertical shaft-head. Lead and zinc ores were mined to a depth of five hundred feet. The conditions under which the miners worked, for little pay, must have been appalling, and they were even made to purchase their own explosives. In 1759, 185 men were employed and were paid by the quantity of work done, so accident or illness was a very serious matter.

George Symington built a beam pump engine which has been preserved as an industrial monument in Wanlockhead. A house shows how the miners formerly lived. There is also Scotland's second subscription library, established in 1756. The oldest is at Leadhills, only a mile away.

The rain became harder as the day progressed and lunch was eaten in the shelter of the archways at the Visitors Centre for some, while others went in and sampled the excellent fare on offer. A stalwart band set off with containers to pick Cloudberries (*Rubus chamaemorus*), which the leader said grew on Sowen Dod. The valley itself proved very disappointing botanically but some galena was found instead. The rain and latterly the mist did not help matters and only five hardy souls ventured up on top of the hill.

Although about an acre of Cloudberry plants were found there were virtually no berries, which was odd, as ten days before there were lots of unripe berries and it was expected that there would be sufficient to fill the containers. The berries are hard and red at first, then change to soft and amber. It seems unlikely that they would have all been picked by man so could they have been eaten by birds?

Despite the rain, which appeared to be local to Wanlockhead, everyone seemed to enjoy the outing, and several said they wished to return, but the Wanlockhead Museum Trust is suffering from lack of tourists at the present time and its future is uncertain.

JANET WATSON

CARRIFRAN WILDWOOD

Date Saturday, 26th August
Leader Dr Philip Ashmole

Philip Ashmole gave us a talk in October 1999 about the project to restore a complete valley in the Borders to the wooded wilderness which would have existed there before Man came into the equation. He also wrote an article on the subject for our 1999 Journal. However, to be shown Carrifran 'on the ground' by the moving force behind the project was an unforgettable experience.

On a disappointingly dreich day, we met in the small car park which, although close to the road, is well hidden from it. Philip Ashmole updated us, there and as we walked up the valley, on what had taken place since his talk. The target of £350,000 had been achieved and the purchase of the land took place on 1st January, 2000. On the same day the first planting of 100 ceremonial trees took place, all planted simultaneously at the sound of a bugle. These first trees are Hazel, Rowan and Dog Rose and they will form a thicket which will hide the view from visitors until they reach a sheep stell from which the full impact of the vista up the valley will be obtained. The main planting on the valley floor is to be Oak and Birch - Oak on the flatter part and Birch on steeper slopes, and there will also be some Rowan, Alder, Bird Cherry and Holly with Ash in the lowest area. Deer fences have been erected in two areas, one in the lower valley and the second higher up at the junction of the two main burns. Although eventually it should be possible for significant numbers of deer to live in the woodland, culling of deer will have to take place at this stage in order to keep damage to trees low enough to permit establishment of woodland.

In addition to deer, there are non-native goats on the Moffat hills which could quickly cause enormous damage to young trees and at the time of our visit it was thought that the project would involve complete removal of the goats to another area. However, at the time of writing, in view of concern expressed locally, the future of the goats is under discussion. On the other hand, it is intended to restore rich habitats for native wildlife, including birds such as Black Grouse.

Contractors have been used for the first tranche of the main planting and in the first 6 months planting was done, inspection by the Forestry Commission took place and related grants were received. Herbicides had to be used where the trees were planted to give them a reasonable start. Grazing rights of the farmer continue but this is helpful because sheep keep the grass down. There is a high population density of voles, and all trees are being planted in small tubes because of this, although their sharp edges can cause some damage to the young trees.

We were surprised to see bunches of heather attached to the deer fence in the lower part of the valley but learned that this was to alert grouse to the presence of the fence.

There was a good path initially, but this disappeared higher up and we had rough ground to cover and some interesting crossings of burns. Our lunch spot, on a bluff above a small gorge and overlooking a rocky outcrop, was an ideal one for botanists in the party who used their binoculars to identify Roseroot (*Sedum rosea*), Wood Crane's-bill (*Geranium sylvaticum*), Common Valerian (*Valeriana officinalis*), Goldenrod (*Solidago virgaurea*), Parsley Fern (*Cryptogramma crispa*) and Lemon-scented Fern (*Oreopteris limbosperma*). On the way back down the valley we found Starry Saxifrage (*Saxifraga stellaris*) and Grass of Parnassus (*Parnassia palustris*).

What we have seen is the beginning of a major project. It will be very interesting to follow its progress in future years.

MARY CLARKSON

LAMMERMUIRS, EASTERN BORDERS

Date Saturday, 2nd September
Leader Bill Baird

Maps: OS 1:50,000, Duns and Dunbar Sheet 67
Geological Survey, 1:50,000 Dunbar sheet 33(E) S

The purpose of this excursion was to examine Silurian rocks which had been steeply folded during the Caledonian mountain building period. We also planned to visit the outcrop of the Priestlaw granite, which was intruded into the Silurian rocks during Lower Devonian times. In addition it was intended to look at related copper mineral emplacement and the old mines which had been dug to access the copper ore.

The route was along the B6355 going south east from Gifford. Some 5 kilometres from Gifford the road rises sharply as it leaves the low ground of the East Lothian coal basin and climbs the northern edge of the Lammermuirs. Within this initial climb we crossed the Lammermuir fault complex which takes us from the Devonian-Carboniferous rocks, initially onto the Ordovician and then onto the Silurian. The Ordovician has been tentatively named as Caradoc-Ashgill and the Silurian as Llandovery on the basis of rare and poorly preserved marine fossils called graptolites.

The first stop was at a roadside quarry at grid NT 602646. Here, near vertically dipping beds of shale and greywacke were examined, and a general search took place for the rare Graptolite fossils. We proceeded south east on the B6355 past the Whiteadder Reservoir beyond which, to the west, we could see Priestlaw hill. From the banks of the Faseny Water on the north western flank of Priestlaw comes one of the early records of copper minerals in this area of the Borders. In the Geological Survey Memoire of the area, Howell in 1866, p. 17 quotes Cunningham 'veins of barytes containing copper have been worked to a small extent in the Priestlaw granite'.

Just north of Cranshaws, by the roadside, a large exposure of shales and greywackes was examined. The base of the greywackes shows superb flute casts, indicating both deposition and direction of flow. The flute casts indicate where rapid water flow has gouged out holes in the underlying sediments, which were later refilled with fine debris. A further opportunity was taken at this site to look for graptolite fossils.

At Ellemford Bridge a stop was made by the Whiteadder where we viewed the entrance to one of the two Ellemford copper mines. Some brief discussion took place on the history of the mine, the mode of emplacement of the copper ore and the influence of the Cockburn Law granite on that emplacement.

The group now proceeded to Elba via Preston and the A6112, where we examined three copper mines. There was a chance at one of these mines to see traces of copper ore in the end wall by those who were bold enough to risk wet feet. From Elba, by the narrow swinging suspension bridge, we went on to visit the most southerly broch in Scotland at Edin's Hall (possibly Odin's Hall) where this structure was discussed in its archaeological and landscape setting.

W.J. BAIRD

.......WET FEET!

ETTRICKBRIDGE CIRCUIT

Date Saturday, 9th September
Leader George McDougall

This outing, attended by 14 stalwarts, on a grey breezy morning 1 1/2 hours drive from Edinburgh, was designated 'general, hillwalking'. On the day, fungi and insects were the natural history themes that demanded our attention. However, the walk was memorable for other reasons, including our visit to the renovated Border Keep, Kirkhope Tower. This was once home of Wat Scott, a notorious reiver whose accidental drowning of a child hostage in the Ettrick caused him to order the construction of the first bridge at the village. The tower has been recently mortared and looks almost white from a distance, standing alone by a burn, with extensive views to the south from where any raiding party would come.

In a field by the Swire Road a newly born calf was being licked by its mother, the calf's legs splayed as it made it first steps before seeking the udder. After leaving the cars outside the Ettrickbridge Church we walked up the lane to the village cemetery. In the close-mown turf was a variety of fungi, the orange Fairy Clubs _Clavulinopsis sp_ being typical of this habitat. There were other typical mushroom-shaped fungi under the trees, including two _Russula_ spp, one of which was almost certainly _R. delica_.. The odd, Puffball-like _Scerodermas_ were scattered round, but the least expected finds were the ladybirds on a Lime tree. If an outing has ladybirds as its theme, then we find very few. On this 'general' outing we found perhaps 30, and a good number were on this tree. The Larch, which lacks spots and is small and oval was the most common, with the 10-spots displaying their ability to vary and the Chequered looking nothing like the typical individual. Later a melanic 10-spot was found, misidentified by me as a Pine ladybird. The Lime tree leaves were covered in aphids, and at least two Cream Spot ladybirds were there, one much larger than the other. Other ladybirds seen later on were a couple of 7-spots, and many more Larch ladybirds.

After the cemetery we walked through hill pasture with _Hygrocybe_ fungi of every shade of red and yellow. The Parrot Waxcap (_Hygrocybe psittacina_) is neither red nor yellow; it is one of the few common green fungi, this colour fusing with pink and orange on its cap. The largest fungi in the grassland were enormous _Agaricus_ species, dinner- plate size and taken home for dinner if in good condition. Less appetising were the _Amanitas_, _muscaria_ (Fly Agaric) and _rubescens_ (The Blusher), whose presence depended upon the Birch and other trees on the other side of the wall. Bracken and Gorse dominated the hill above the tower, but a couple of more favourable places had collections of interesting plants. Rockrose (_Helianthemum nummularium_) and Thyme (_Thymus polytrichus_) were on dry slopes; Flax (_Linum catharticum_), Quaking Grass (_Briza media_) and a collection of sedges, usually closely grazed by cattle, were in the damp flushes. However, the plants took second place to fungi in terms of colour and interest today. At Kirkhope Tower a few Welted Thistle plants replaced the Marsh, Spear and Creeping Thistles which seemed to be everywhere else. Beside Old Kirkhope Farm was Good King Henry (Chenopodium bonus-henricus) which usually occurs where houses are or have been.

We stopped to examine a colourful hairy caterpillar, possibly Painted Lady, on a Creeping Thistle. The Willow trees were prematurely brown, their leaves shrivelling and coated in a rust perhaps spread by the shiny beetles that were apparently confined to the Willows. [See **Plant Gall** article, P 20 and Footnote below.] The Sycamore leaves were affected by the Tar Spot (Rhytisma acerinum). Only the Birch leaves were free of fungal infection, but older trees had been invaded by Birch Polypore fungus - Piptoporus betulinus. The native wood sloping down to the torrents of the Ettrick, flanked the last half mile of road back to the village. Goldenrod (Solidago virgaurea) was still flowering, and the fungi included the brick-red Beefsteak bracket - Fistulina hepatica growing on an Oak and the sombre Melanoleuca melaleuca.

A Hawthorn Shield Bug was found on a Hazel leaf; this was permissible, as none of the Larch ladybirds had been on the Larch trees. The solitary Buddleia bush in the village lived up to its name of Butterfly Bush for once. The large dark butterflies were Peacocks, and Red Admirals; Small Tortoiseshells and Large White butterflies also were attracted to the flower spikes. We had seen a Small Copper butterfly and a Green-veined White near Kirkhope, so the walk was almost as memorable for the colourful insects as for the fungi. The large wasp-like hoverflies, the orange-brown spiders, and the snails, bees and other invertebrates were noticed but we were unable to identify them accurately. The walk ended by the bridge at the east end of the village, the old name for the village being Ettrickbridgend.

DAVID ADAMSON

Footnote:

I think the leaves had actually been eaten by the shiny green Leaf Beetles (probably Phyllodecta vulgatissima) and their black larvae. They seem to eat everything but the surface of the leaf, which then goes brown and shrivels. JM

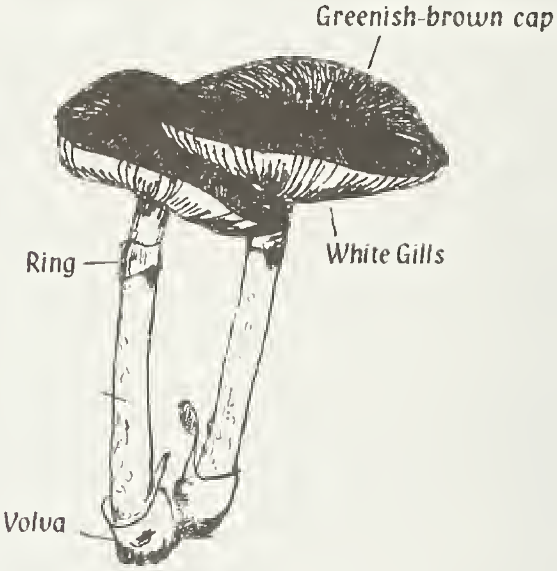
Or was it a Gall-midge? Plant Galls article - Eds.

GOSFORD

Date Saturday, 16th September
Leader Mary Clarkson

The fungus foray in the grounds of Gosford House attracted some 15 members (including a couple of juniors) who were rewarded by fine weather (despite some gloomy forecasts earlier in the week) and some very interesting finds.

Perhaps the star fungal attraction was the Amanita phalloides (Death Cap), one of our most poisonous native mushrooms (apparently a single cap, or even half of one can be fatal). Fortunately it's rarely seen in Scotland, but the weather this year seems to have suited it, so there have been reports from several sites. In Gosford it was present in some quantity, the first find being a beautiful ring of some 20 or 30 mushrooms, growing amongst Lily-of-the-Valley (Convallaria majalis), a considerably less poisonous plant.



AMANITA PHALLOIDES
Death Cap

Death Cap was not the only unusual find. The Helvellas are oddly shaped fungi which shoot their spores into the air from their convoluted 'caps' rather than dropping them from below the cap; and two species were found, Helvella crispa which is white, and Helvella lacunosum which is grey-black.

HELVELLA LACUNOSUM
Black Helvella

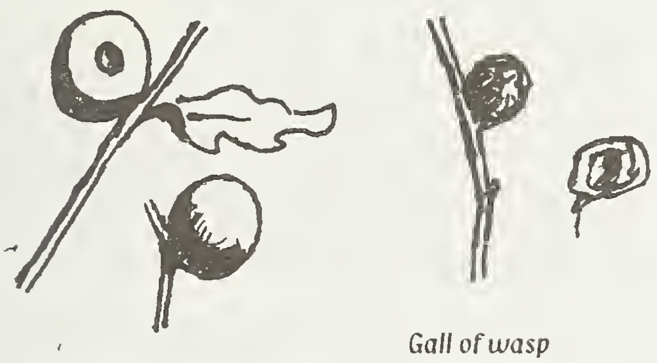
There were also two different Hare's Ears Flavoscypha sp. and Otidea onotida; and a little club-shaped, fungus, Cordyceps ophioglossoides, which is parasitic on a type of underground truffle. The Cordyceps was growing in a damp mossy place along with Leotia lubrica (Jelly Babies), a small gelatinous mushroom, not uncommon but very easily missed, and Clavaria acuta, little white spindles growing through the moss.

Since there was a good deal of Beech around there were quite a few Beech-associated fungi of a more conventional type - the Milkcaps - Lactarius blennius and L. pallidus - and the colourful Russulas - R. mairei, (the Beech Sickener) which is scarlet , and R. fellea which is yellow. One of the most striking of the Beech associates is *Xerula (Oudemansiella) radicata* (Rooting Shank), a mushroom with a wrinkled, shiny brown cap and a long stalk which continues deep underground to a root or buried wood. Dead Beechwood in turn is colonised by the small hemispherical growths of *Hypoxylon fragiforme* which are brown to start with, eventually hard and black. There was a good colony near the fallen trunk where we had lunch.

There are fewer fungi particularly associated with Oak, also present in the wood, though we did find one, *Lactarius quietus* (Oak Milk Cap). Oaks however are particularly noted for their galls, growths caused by a variety of small wasps which lay their eggs on the twigs, leaves, flowers or fruit.

We found some Marble Galls (hard round galls formed on the twigs), caused by two different Gall wasps, which Great Tits had split open to get at the larvae inside; but more surprisingly we also found Knopper Galls on many of the acorns. The Knopper Gall Wasp (*Andricus quercuscalicis*) was introduced from France in the 1960s, and has been spreading northwards since then. It was quite a shock however to see such a serious infestation north of the Border.

MARBLE GALLS formed by wasps



Gall of wasp *Andricus kollari*

Gall of wasp *Andricus lignilicola*

It was a bit late in the year for flowers, but there were one or two interesting finds. The most exciting was a good population of Lesser Water Parsnip (*Berula erecta*) in a ditch, while the haha provided a damp wall rich with ferns, including Maidenhair Spleenwort (*Asplenium trichomenes*), Hart's Tongue Fern (*Phyllites scolopendria*) and a splendid colony of Brittle Bladder Fern (*Cystopteris fragilis*).

Returning to the fungi, it was interesting to see four species of *Xylaria* : *Xylaria hypoxylon* (Candlesnuff), *X. polymorpha* (Dead Man's Fingers), *X. longipes* and *X. carpophila*. . They are all hard black fungi growing in clusters on dead wood. The Candlesnuff is quite small, forked, with a white tip, while Dead Man's Fingers is more substantial and really does look like blackened fingertips when it grows out of buried wood. Although it grows on all deciduous wood, it apparently prefers Beech; *X. longipes*, a smaller version, prefers Sycamore, while *X. carpophila* grows on decaying Beech mast. Beech woods, like conifer woods, are poor for flowers but rich in fungi.

JACKIE MUSCOTT

HOPETOUN ESTATE

Date	Saturday, 23rd September
Leader	Mike Richardson

Hopetoun is a favourite venue for fungus forays and the lawns are familiar to those of us who have taken part in the recent fungal survey of meadow Waxcap grasslands. Nevertheless, to be shown the fungi of such a rich area in a year of abundance by a leader as expert and informative as Mike Richardson was a memorable experience.

We had scarcely left the car park when we were confronted by a large group of the aptly named Lawyers' wigs (*Coprinus comatus*), with their white shaggy caps, erupting from the path. A few steps farther on, in troops amongst leaf litter under the trees, was another white toadstool, this time a small one, *Inocybe geophylla*, which has no common name but is one of the few of its genus to be recognisable in the field. Its white silky striate cap with a prominent umbo, clay-coloured gills and smell of raw potatoes are distinctive. A lilac-coloured variety of the same toadstool accompanied it.

Moving on to an area of mature woodland to the side of the House, we found a good variety of fungi growing in mycorrhizal association with the trees, enabling the tree roots to absorb nutrients from the soil more efficiently and, in return, providing carbonates to the fungi. These included *Russula laurocerasi*, smelling strongly of Cherry Laurel (or marzipan to some of us); *Lactarius blennius*, with its slimy, concentrically zoned grey-green cap and very hot white milk; and *Amanita rubescens*, whose common name, the Blusher, well describes the reaction when its flesh is damaged.

In the afternoon, we moved on to the lawns, one of the best sites in Scotland for meadow Waxcaps, or *Hygrocybes*, which, with their waxy gills and brightly coloured caps, are amongst our most attractive toadstools. A dozen different species were found, including the beautiful pink *Hygrocybe calyptriformis*, commonly known as the Ballet Dancer, whose cap splits and flicks upwards like a ballet dancer's skirt as it matures. The lawns had also produced a good crop of 'Magic mushrooms' (*Psilocybe semilanceata*) with their narrow pointed caps and tendency to turn blue, and of the bright ochraceous *Cystoderma amianthinum* with sheathed stems, whose smell can best be described as 'wet washing cloths'!

A splendid day's foraying was rounded off with a display of specimens below the colonnades of Hopetoun House, and tea and scones in the cafe.

Our thanks are due to Hopetoun Estate for giving us permission to foray in the grounds, and to Mike Richardson for leading us so ably.

MARY CLARKSON

TENTSMUIR, FIFE

Date	Saturday, 30th September
Leader	Gordon Maxwell

It was a dull morning when we set off from Edinburgh in a fairly thick mist, expecting yet another wet Saturday excursion. However, visibility improved as we approached St. Andrews and by the time we were driving through Tentsmuir our spirits rose, with views of a host of fungi to feast the eye. We were met by our leader for the day and a group of his associates from the Dundee Natural History Society. In all, we totalled about 24 persons, armed with baskets, boots and brollies.

The large, flat expanse of Tents Muir is the result of a slowly receding tideline. It is bordered on the north and east by scrub and dunes, running out to the Tay Estuary. The forest was planted some 50 years ago, mostly with Pines, also Birch and Willow. Tentsmuir Point in the north and Morton Lochs are designated as Nature Reserves; the remaining area is Forestry Commission land. We followed a path running parallel to the shore, and were warned not to stray inland along the maze of forest paths unless carrying a compass.

The larger toadstools appeared to be predominant. They made a colourful display, from the bright red of *Amanita muscaria* (the Fly Agaric), through the pinks of various species of *Russulas* to the yellows and browns of the *Boletes*. Smaller toadstools of note were the bright yellow *Tricholoma flavovirens*, found in sandy pinewoods, and *T. sulphureum*, a relatively uncommon species. Wandering over the grassy dunes we came across plentiful arrays of *Hygrocybe* (Waxcaps). The most remarkable find of the day, and the first recording at Tentsmuir, was the rare *Phallus hadriani*. This Stinkhorn grows in sand dunes; it is distinguished by its lilac-coloured egg, the remnants of which enclose the base of the stem of the fruiting body. Amongst other curiously-shaped fungi were *Otidia alutacea* (Hare's Ear), a puffball *Calvatia excipuliformis*, and a large patch of a fine, grass-like Club fungus - *Clavariadelphus junceus* Perhaps the most bizarre specimen of the day was *Helvella lacunosa*, which was found in unusually large numbers. The contorted, grey/black fruiting bodies were barely discernable in the leaf litter of a Birchwood copse.

Turning our eyes seaward for a change, instead of downwards, we spotted a fine sight of some 50 Common Seals swimming over to the beach from a distant strand as the tide rose. As a final treat we were taken to see one of the Dundee NATS' treasures that had been carefully monitored for around 20 years. This was a clump of autumnal remnants of the saprophyte *Monotropa hypopitys* (Yellow Bird's Nest), recurring in its classic locality beneath pines.

Our thanks are due to Gordon and his colleagues for entertaining us to a most rewarding foray, and pointing out sites of special interest. At the end of the day we had a haul of over 100 different fungal species.

MARGARET PERRY

DAWYCK

Date	Saturday, 7th October
Leader	Prof Roy Watling

Having at last managed to shepherd everyone through the entrance, Roy began by giving us a brief history of Dawyck, followed by an explanation of the different types of fungi: mycorrhizally associated with trees and their roots; leaf litter rotters; the parasitic.

Baskets weren't necessary, we were told, which was just as well, as most of us were already carrying umbrellas. The rain just varied a little in intensity, but somehow that didn't matter as we moved from place to place finding all that Dawyck had to offer. Roy gave detailed explanations of each, patiently answered questions, and told anecdotes along the way. One of the early finds was a lovely group of the handsome golden yellow *Phaeolepiota aurea*, one of the Edinburgh Biodiversity species.

Higher up the slope were large numbers of the bright red *Russula mairei*; of *R. fellea* with its buff cap and strong scent of geraniums; and of *Lactarius blennius* whose grey-green cap looked even slimier than usual in the rain. These all grow in association with Beech, although some were at a considerable distance from the trees, whose root systems are extensive.

After lunch, we were shown a slope covered in the Blackening Russula (*R. nigricans*) which is not too fussy about its choice of trees.

As we turned for home, an unusual cup fungus, *Peziza arvenensis*, was spotted on a pile of woodchips. This is distinguished under the microscope by its very finely verrucose spores.

Coming downhill, Roy fell suddenly to his knees, started digging with his hands and produced - a Truffle (*Elaphomyces granulatus*). Apparently the trick is to look where squirrels and rabbits have disturbed the ground.

So enthralled were we that we had happily stayed out in the wet until 3.30pm. Now hot tea or coffee beckoned, but not before we had thanked Roy and asked him to lead another outing next year.

I should add that over the day Roy found far more than the 50 common species on the Dawyck list he had given us, but as he pointed out, three weeks previously there had been very few fungi in the entire garden.

A complete list is available for anyone interested.

JEAN MURRAY

VOGRIE COUNTRY PARK

Date Saturday, 21st October
Leader Lyn Blades

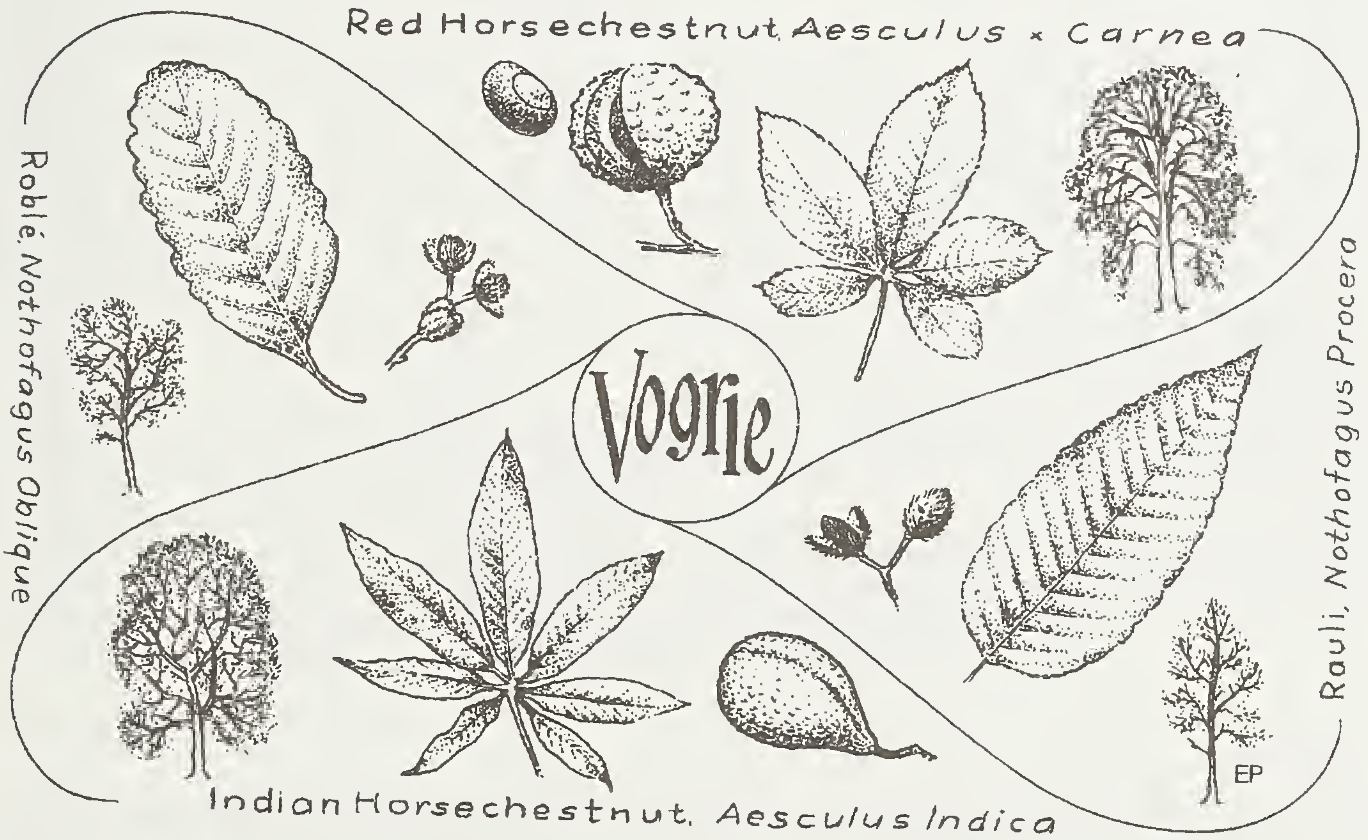
In 1975 Vogrie House, its grounds and the remaining 106 hectares of the estate were bought by Midlothian County Council, and opened as a Country Park in 1982. The original estate was bought by James Dewar in 1719 and then extended by the purchase of Stobbo Estate in 1753. The present pattern of fields, hedges and shelter belts replaces the old open fields of cultivated strips. Many of the trees in the parkland of Vogrie, some native Scottish, others exotics, were planted nearly 200 years ago. The present house was completed in 1877.

During the Second World War the valley slopes were clear-felled, and naturally seeded Elms and Sycamores established themselves. Later, part of this area was planted with conifers by the Forestry Commission. In the 1980s Dutch Elm Disease killed the Elms. Some were left standing for wildlife but most were removed. The Sycamores, not native trees, are being cut, and the conifers are now being harvested. Because of steep slopes, it is difficult to extract the trees without damaging the ground, and in certain areas horses are used. Scottish Natural Heritage is using the money obtained from timber to replant the wood with a variety of native species.

The Saturday of the outing was a perfect autumn day of blue sky, sunshine and no wind - a wonderful day to admire the beautiful colours of the leaves "yellow and black and pale and hectic red". There did not seem to be many birds, and most of the flowers were over, but the fungi enthusiasts appeared happy with their finds. This Saturday really was a day for admiring the trees.

The Horse Chestnut (*Aesculus hippocastanum*) had turned a beautiful light bronze colour, and one Red Chestnut (*A. x carnea*) obligingly displayed its fruit, different and less prickly than that of the Horse Chestnut. The young Indian Horse Chestnut trees (*A. indica*) planted near the path had beautiful, slender leaflets on long red stalks and small, pear-shaped fruits.

There were English Oaks (*Quercus robur*) and one huge spreading Sessile Oak (*Quercus petraea*) with great black elbowed branches. Later plantings of Turkey Oak (*Q. cerris*) were identified by their buds which are surrounded by long, persistent 'whiskers' (stipules). We were unable to find their distinctive fruit, an acorn in a mossy cup surrounded by long, soft, pale green scales.


Red Horsechestnut, Aesculus x Carnea
Roblé, Nothofagus Oblique
Vogrie
Rauli, Nothofagus Procera
EP
Indian Horsechestnut, Aesculus Indica

There are three walks which are route-marked: the Rhododrendon Walk of 1 km.; the North Walk of 2kms; and the Tyne Valley and Alderdean Wood of 2 kms. There are also many other paths and tracks to explore. Vogrie offers a wide variety of habitats - woods, grassland, a butterfly meadow, ponds, burns and steep wild slopes.

The walnuts on the ground were unfortunately not ripe. Near the house were two magnificent, tall Maples whose leaves had spread a carpet of "hectic red". Here also were Cedars of Lebanon (*Cedrus libani*), and a Giant Redwood (*Sequoiadendron giganteum*) and a small pinetum of exotic species - pines with needles in bundles of two and of three, and one lovely tree with bundles of five long, slender, soft needles. The Alder Wood lies along the burn and has been neglected for a long time. During the 19th century the Alders were carefully managed on a coppicing system. The wood, being fairly waterproof, was in general used for clogs, but from Vogrie much was made into charcoal for gunpowder works at Gorebridge. The Alder Wood is now being managed on a long-term basis.

By the main path were two Southern Beeches. The first, Roble Beech (*Nothofagus obliqua*) has small leaves with wavy margins, and 7-11 pairs of impressed veins. It is a deciduous tree, native to Chile and Western Argentina, where once it formed extensive forests. The Spanish gave it their name for Oak, Roble.

The other, Rauli Beech (*Nothofagus procera*) has larger leaves, with slightly wavy margins and 15-18 pairs of prominent, impressed veins. This, another deciduous tree, is native to the Andes of Chile and to Argentina, where it borders on Chile. It is an important timber tree, its wood being superior to that of the Roble Beech. It has a fast growth rate and its use in forestry is being extended.

By the side of the perimeter path, the final find of the day was made. Nail Galls were seen on the yellowing leaves of the Large-leaved Lime (*Tilia platyphyllos*). They are caused by the mite *Eriophyes tiliae tiliae*.

Many members ended the day with hot drinks at the cafe, open for its last week-end before winter closure. We thanked Lyn for a happy and interesting outing.

MARGARET WHITE

SOUTH QUEENSFERRY

Date Saturday, 18th November
Leader Betty Mitchelhill

The outing began with a short talk about the classification of rocks and the division of Geological time. Then we went down onto the beach under the Forth Bridge, noting the granite of which it was made, to the first outcrop of sandstone rocks. There we found evidence of fossil trees. From the round-shaped markings we decided we were looking at *Stigmaria*, i.e. fossilised tree roots.

A short distance along the path and we returned to the beach to look at a splendid sill of White Trap. Here the basalt of the sill had been altered by the oil shale carbons through which it has passed and been changed into White Trap. At the Point and below the sill we saw fossil algal patches forming clear rounded humps. Here also we compared the reaction of rocks to pressure. The sandstone above the sill showed breaking and faulting while the mudstones further down the beach had simply folded. Just round the Point we looked for oil shale which, though it covers a wide area, has few outcrops. We tried testing for a brown streak and the wood-like sound when the rock was struck.

Returning to the path we turned our attention to matters other than geology. There was a variety of things to see. On the wall there was an abundance of Maidenhair Spleenwort, some Wall-rue and a few plants of Black Spleenwort. Some common flowers still had a few late blooms; for example, Red Campion, but most of the flowering was over.

We found the area had a rich variety of fungi; over 30 kinds were found. These ranged from the common to the rather unusual - from Puffballs and Candle Snuff to *Melanoleuca polioleucha*. Under a Horse Chestnut there was a fairy ring, about 7 metres in diameter, of *Clitocybe nebularis* , while on the cut grass there was a large patch of Orange-peel fungus (*Aleuria aurantia*). On a fallen log was the fungus *Xylaria polymorpha* (Dead Man's Fingers) and then, strangely enough on returning to the beach we found another kind of Dead Man's Fingers: the soft coral *Alcyonium digitatum*, which must have been washed up by the recent storms.

We returned to geology at Hound Point. We went down to the beach on the eastern side of the Point to look at the Dolerite Sill intruded into the sandstone. We saw how a section of the sandstone had got caught up by the intruding dolerite, and were reminded of Hutton's section on Salisbury Crags. Those who climbed up the rock were very impressed by the clear contact.

BETTY MITCHELHILL

Footnote

The botanist in me was particularly interested in the algal fossils - stromatolites. These fossils are formed by colonies of cyanobacteria (blue-green algae), very simple single-celled organisms, lacking a nucleus, but containing chlorophyll and so able to photosynthesise. (That is manufacture food, in the form of sugars, from water and carbon dioxide, oxygen being produced as a waste product). The earliest stromatolite fossils (from Australia and South Africa) are about 3,500 million years old. They are the earliest known fossils, and the algae responsible for them probably also helped to increase oxygen levels in the atmosphere. Stromatolites are still being formed today in the intertidal zone at Shark Bay, Western Australia. They form gelatinous masses in highly saline conditions, and grow about 1 centimetre in 25 years.

Cyanobacteria may be 'primitive', but they have seen the rise and fall of many more complex organisms, eg Ammonites (about 570 million years ago to 65 million years ago), Giant Clubmosses and Horsetails (350 - 290 million years ago), Dinosaurs (230 - 65 million years ago), and they are still going strong. They will probably outlast us. JM

OBSERVATIONS
2000

OBSERVERS

BC	Bill Clunie	MC	Mary Clarkson
EF	Elizabeth Farquharson	JL	Jean Long
JM	Jackie Muscott	E&EP	Eric & Eileen Perry
CR	Charles Rawcliffe	MR	Mary Robertson
CS	Connie Stewart	ES	Eunice Smith

JANUARY

1/1/00	Mediterranean Gull at Musselburgh.	BC
	Several specimens of the fungus *Paurocotylus pila* (in the shape of a small red hollow crinkled sphere) were found in the car park at Lauriston Castle, Davidson's Mains. Birds were noted pecking at base of fungus.	ES
	A large spread of the fungus *Ramaria bourdotiana*: this specimen which has the appearance of a stretch of deep yellow rugged coral was a first record for the UK. Royal High School, Davidson's Mains. Identified by Professor Roy Watling.	ES
	Peziza michelii, a saucer-shaped fungus which has a violet tinge. Royal High School, Davidson's Mains. Identified by Professor Roy Watling.	ES
2/1/00	5 Greenshank at Tyninghame Bay.	BC
11/1/00	Two Treecreepers, Comely Bank Cemetery	CR
16/1/00	One Weasel, Bawsinch Reserve	CR
	Glaucous Gull, Seafield.	BC
19/1/00	Tawny Owl calling, Glenogle Road	CR
23/1/00	2 Male Surf Scoters at Ruddons Point, Fife.	BC
30/1/00	2 Shore Larks, Tyninghame Bay.	BC

FEBRUARY

1/2/00	An Otter, Duddingston Loch	CR
13/2/00	2 Ravens at Loganlea.	BC
15/2/00	An Otter, Duddingston Loch	CR
17/2/00	Great Spotted Woodpecker at newly erected bird box. Garden at Davidson's Mains.	ES
20/2/00	12 Hawfinches, Scone, Perth.	BC
25/2/00	Curlews (22+) in the field at Lauriston Castle, Davidson's Mains.	ES
26/2/00	Carrion Crows eating Sea Buckthorn berries, Yellowcraigs	CR
	Tawny Owl at Dirleton.	BC
29/2/00	Several specimens (44) of Homo Sapiens (some in unusual plumage) observed feeding and communicating. Telford College	ES

MARCH

7/3/00	An Otter, Duddingston Loch	CR
8/3/00	At least eight frogs assembled in our garden pond in Peebles. Spawn has been produced.	E&EP
13/3/00	A few specimens of the small stalked Earth Star fungus (*Geastrum pectinatum*) Royal High School, Davidson's Mains.	ES
18/3/00	Sweet Violet, both purple and white flowers, under hedge. Melrose Circuit. 2 Tortoiseshells and 1 Peacock butterfly also seen.	ENHS
28/3/00	Chiffchaffs singing in Roslin Glen	MC
	Water Pipit, Ruddons Point, Fife.	BC
29/3/00	A pair of Tufted Ducks, Main Pond, Royal Botanic Garden	CR

APRIL

1/4/00	A Chiffchaff preening between bursts of song with an occasional flight to catch an insect in Ravelston Wood.	MR
2/4/00	Crane at Aberlady.	BC
3/4/00	Purple Toothwort (*Lathraea clandestina*) and large area of Hart's Tongue Fern (*Asplenium scolopendrium*) seen on an outing in the grounds of Carberry Tower near Musselburgh. (Outing of The Fungus Group of South-East Scotland).	ES
6/4/00	Treecreeper having a `shower' under water running from garden hose. Garden at Davidson's Mains.	ES
7/4/00	*Bombylius major* in garden (exactly same spot as some years ago). Garden at Davidson's Mains.	ES
8/4/00	A pair of Gadwall accompanied by Goldeneye and Mallard; also a Wheatear seen on NATS outing with Charles Pountain.	MR
23/4/00	Orange Tip butterfly. Garden at Davidson's Mains.	ES
	Torrential rain caused flooding in Edinburgh; Murrayfield under 3ft of water.	MR
24/4/00	Willow Warbler singing in garden trees, Blackhall.	MR
28/4/00	First Swallow seen at Hopetoun House.	MR
29/4/00	Dead Badger on dual carriageway about 1 mile S. of Bridge of Earn	EF
	Pair of Buzzards in tall tree, South Woods and displaying over South Deer Park.	MR
31/4/00	1 Dead Badger on road near caravan site at Monk's Muir, E. Lothian	JL

MAY

4/5/00	Orange Tip butterflies along Water of Leith Walkway near Juniper Green.	EF
13/5/00	An Otter, Duddingston Loch	CR
18/5/00	2 Little Terns, Tyninghame Bay	BC
20-21/5/00	First Red Deer calf born at Hopetoun.	MR
22/5/00	Iceland Gull, Musselburgh Lagoons.	BC
	17 spikes of Birds Nest Orchid counted in Hopetoun grounds.	MR
23/5/00	House Martins nesting on east side of Hopetoun House for first time to my knowledge.	MR
26/5/00	Bird Cherry in flower at Main Entrance gate, Hopetoun.	MR
27/5/00	Heavy rain all day. Cold wet weather persisted form late May till 12th June when it became a bit warmer.	MR
30/5/00	7-spot Ladybird, Bawsinch Reserve. None in 1999	CR

JUNE

5/6/00	Red Necked Phalarope, Musselburgh Lagoons	BC
8/6/00	*Agaricus bohusi* beside path at Vogrie (confirmed by Roy Watling).	EF
13/6/00	An Otter, Duddingston Loch	CR
21/6/00	One Coot, Inverleith Pond (small section)	CR
24/6/00	Little Gull at Belhaven Bay	BC
27/6/00	Common Blue butterfly, *Polyommatus icarus*, Bawsinch	CR
30/6/00	Painted Lady butterfly in Bruntsfield garden.	EF

JULY

	July was generally a dull unsummery month, except for a few days in the middle of the month.	MR
2/7/00	Yellow Underwing moth (*Noctua pronuba*) in grass, Spring Garden, Hopetoun.	MR
	An angry flock of Swallows mobbed a Magpie which sought refuge in a tree, Hopetoun.	MR
3/7/00	Specimens of the pink-spored fungus *Volvariella speciosa*.. Garden at Davidson's Mains	ES
11/7/00	Ruddy Duck, Duddingston Loch	CR
	Peacock (*Nymphalis io*) caterpillars walking on the path, Bawsinch Reserve	CR
13/7/00	Red Admiral butterfly at Cramond Island. Seals also evident.	ES
18/7/00	Female Tufted Duck and 9 pulli, Duddingston Loch	CR
22/7/00	Small Copper, *Lycaena phlaeas*, Bawsinch Reserve	CR
29/7/00	I watched a Grey Squirrel eating a Russula fungus at Hopetoun.	MR

AUGUST

	August was generally warm, dry and sunny, with many fungi appearing. At Hopetoun there was a ring of Parasol mushrooms under a Yew tree, a Ramaria (possibly *R. stricta*) on a damp path, a carpet of *Russula nigricans* under Beech at Linlithgow Avenue and many Horse mushrooms on the east lawns.	MR

1/8/00	An Otter, Duddingston Loch	CR
6/8/00	Lime Gall, caused by a mite, *Eriophyes leoisoma* , forming a hairy patch on the underside of the leaf. Comely Bank Cemetery	CR
	Plant of Great Lettuce (*Lactuca virosa*) was found on the Norham NATS outing.	MR
11/8/00	Regular appearance of many specimens of the yellow, short-lived fungus *Bolbitius vitellinus* on wood chips. Garden at Davidson's Mains.	ES
14/8/00	5 Giant Puffballs, boulder sized, near North Deer Park gates, Hopetoun	MR
15/8/00	Olive-green Dragonfly (female *Sympetrum striolatum*) basking on stone. A neighbour's pond was being cleaned at the time. Garden at D. Mains.	ES
	Many large *Boletus erythropus* under Lime trees near the kiosk at Hopetoun, confirmed by Mary Clarkson.	MR
18/8/00	Several specimens of *Boletus luridus* (a relatively uncommon fungus) under a Lime tree in the grounds of Dunfermline College, Cramond.	ES
19/8/00	Wild Basil (*Clinopodium vulgare*) at Gorebridge on very wet NATS outing.	MR
20/8/00	4 Buzzards flying over South Deer Park, Hopetoun. The pair had bred in South Woods.	MR
21/8/00	Small Copper butterfly on Valerian in garden at Davidson's Mains.	ES
27-31/8/00	A large flock of Long-tailed Tits, a few Willow Warblers, a Painted Lady butterfly and a Small Copper seen in my Blackhall garden.	MR

SEPTEMBER

This was a warm month with plenty of rain. MR

2/9/00	Long-tailed Skua at Hound Point	BC
	Black Tern at Hound Point	BC
4/9/00	House Martin migration under way.	MR
	Peacock butterfly. Garden at Davidson's Mains.	ES
8/9/00	Kingfisher, Duddingston Loch.	CR
9/9/00	Flock of Long-tailed tits. Garden at Davidson's Mains.	ES
16/9/00	An amazing fungal flora found on the foray at Gosford Park, NATS outing.	MR
18/9/00	The Earth Star fungus, *Geastrum pectinatum*, in the grounds of Lauriston Castle, Davidson's Mains.	ES
19/9/00	Painted Lady butterfly. Garden at Davidson's Mains.	ES
23/9/00	Many specimens of the Golden Sock fungus, *Phaeolepiota aurea*, at Doune Ponds, near Dunblane. This fungus is known in North America by the common names Aladdin's Lamp and Alaskan Gold.	ES
	We found over 100 species of fungi on the Hopetoun foray, including *Helvella crispa* which had not been previously recorded. (see Outing Reports)	MR
24/9/00	The few Swallows seen yesterday have now gone.	MR

OCTOBER

There was a prodigious Waxcap flora on the Hopetoun lawns this year. The area of the Ballet dancer (*Hygrocybe calyptriformis*) is more widespread. Earth Tongues (*Geoglossum fallax*) followed and were still present in mid-December. MR

5/10/00	*Sarcoleotia turficola* on the ridge of Craigengar in the Pentland Hills. This uncommon fungus looked like a group of green buttons in a pool of sphagnum but each 'button' proved to have a pink fleshy stem. (confirmed by Prof. Roy Watling)	MC
14/10/00	Raddes Warbler, St. Abb's.	BC
	Yellow Browed Warbler, St. Abb's	BC
19/10/00	Kingfisher, Duddingston Loch.	CR
25/10/00	At long last the mystery plant which had been growing in the garden Davidson's Mains all summer was identified when it appeared on the screen as part of Donald Manson's talk to the Society. The identification of Ploughman's Spikenard (*Inula conyzae*) was confirmed by Douglas McKean of the Royal Botanic Garden. This may be the second Scottish record - the other being from a pine wood near Dirleton in 1962.	ES
	Dead Badger floating on the canal at Linlithgow.	JL
27/10/00	I found Earth Tongues on my neighbour's lawn and my own, much to my astonishment. Looking around gardens in the area I found many more lawns with Earth Tongues, never seen there before; identified by Mary Clarkson.	MR
31/10/00	Wren emerging from hole it had made in the mossy side of a hanging basket. Later a Blue Tit was seen emerging from the same basket. Garden at D Mains.	ES

NOVEMBER

	November 2000 was the wettest November on record.	MR
2/11/00	Dead Badger beside road at Cramond Bridge.	EF
5/11/00	Dead Badger on A7 near Innerleithen turning at Middleton.	CS
	At Tyninghame dunes, a group of NATS found Scarlet Pimpernel in flower and lots of Blue Fleabane (*Erigeron acer*) reputed to be very rare or absent in Scotland.	MR
10/11/00	Noticed a murmuration of Starlings (some murmuration - they were whistling, clacking, scolding) in a Sycamore tree in Mayfield Road. It seemed a bit early in the day for the pre-roost get together so wondered what they were at; they were flying down to fruit-laden Whitebeams just along the road, each returning with a scarlet berry in its beak.	JM
11/11/00	Red-throated Diver, winter plumage, Gullane Bay.	CR
	Male Blackcap eating berries of Sea Buckthorn, Gullane Bents	CR
11 and 20/11/00	Redwing in garden at Davidson's Mains.	ES
12/11/00	Red Kite at Faseny Bridge, Lammermuirs	BC

DECEMBER

9/12/00	Regular appearance of Hart's Tongue Fern (*Asplenium scolopendrium*) on a stone garden wall. Davidson's Mains.	ES
10/12/00	Near the wooden bridge in Blackford Glen, watched a couple of Goldfinches eating seeds out of the 'burs' on Burdock plants.	JM
12/12/00	Kingfisher, Duddingston Loch	CR
15/12/00	Five Long-tailed Tits, Comely Bank Cemetery	CR
17/12/00	Yellow-legged Gull, Queen's Park, Glasgow	BC
28/12/00	Female Blackcap on my bird-table	MC

Wintering Blackcaps

A male Blackcap appeared at our bird-table in the week before Christmas. For two days he fed steadily, it seemed from dawn to dusk, seldom away for more than ten minutes at a time. He took peanuts, seeds, Cotoneaster berries, the miscellaneous breadcrumbs/cheese/oatmeal I throw on the ground, and fruit - the flesh from ripe melon-rinds was very popular.

About ten days later I spotted a hen Blackcap in a near neighbour's garden, and she soon turned up at our feeding-stations, often in company with the cock. Then a short time later I realised that there were two hens present, and on occasions all three birds were to be seen at the same time.

We left home to visit our family in the Yukon in mid-February, but our neighbour continued to fill the seed and peanut containers. On our return after five weeks I failed to spot the cock bird, and cannot confirm that more than one hen remained. She stayed as a daily visitor until mid-April.

MARGARET WATSON

ARACHNE VEHICULUM-SPECULUM (The Wing-mirror Spider).

Observant car-owners may have noticed spider-webs stretching from the outside edge of one or both wing-mirrors to the window-frame of the car. This indicates the presence of the Wing-mirror Spider, which may sometimes be seen when the car is stationary, making its web, or waiting hopefully for some passing insect. When the car is in motion it is forced to take refuge behind the mirror, and thoughtful owners will refrain from starting the car when one of the spiders is busy. The web, however, being very strong can withstand quite high speeds. Washing the car can also be damaging to the spider, and should be undertaken infrequently and with care. It is not known whether the spider does better in outdoor cars or garaged cars; maybe other car-owners can supply information?

J Muscott

GLEN ROY / GLEN SPEAN EXCURSION

3th to 6th July, 2001

The principal object of the excursion will be to examine the famous 'Parallel Roads' (former glacial lake shorelines) of Glen Roy and the glacial history of this part of Scotland. One day (4th July) will be spent entirely in Glen Roy, and the other (for those who wish to continue with the glacial story rather than other interests) in Glen Spean. The excursion on 4th July will start at the Viewpoint in Glen Roy, about 3 miles from Roy Bridge, at 9.30 am, and that on 5th July will start at Roy Bridge, also at 9.30 am.

TRANSPORT: Private car (own arrangements). Members will need walking boots and waterproofs. Most localities to be visited are within a couple of miles of the public road, but some hillwalking will be required over rough ground and steep slopes.

ACCOMMODATION (own arrangements):Tourist Information Centre at Fort William - Tel. 01397 703 781 for details of Bed and Breakfast establishments, hotels and guest houses at Roybridge and Spean Bridge. Contact Margaret Perry or Janet Watson if you intend going.

MAPS: The area is covered by OS 1:50,000 Sheets 34 (Fort Augustus) and 41 (Ben Nevis), and by the British Geological Survey 1:50,000 Sheet62W (Drift Edition)

LITERATURE: Glen Roy has been the subject of numerous accounts, starting in 1776, and work is still in progress. Most accounts deal only with specific aspects. Item 1 below is a general text covering all of Scotland. However, it is a little out of date and there are a few misinterpretations such as a confusion between deltas and fans. The last two publications are a bit technical, but comprehensive and still in print.

1. ***Scotland's environment during the last 30,000 years*** (R. J. Price). Scottish Academic Press 1983. See especially pages 123-128.
2. ***Glen Roy Area Field Guide*** (J.D.Peacock and R. Cornish) published by the Quaternary Research Association, Cambridge 1989.
3. ***British Geological Survey Memoir (Geology of the Glen Roy district)***. The Stationery Office, London, 1997.

J. D. PEACOCK

KINDROGAN Programme 2001

MARCH

2nd – 4th	Websites, Wellies & Worms	
12th – 14th	CTC Communication Skills	
16th – 18th	Virtual Tours	
	Basketry	
19th – 22nd	CTC Visitor Safety	
27th – 30th	First Aid	s

APRIL

6th – 8th	Computers for Beginners	
	Spring Walks	
9th – 11th	CTC Environment for All	
13th – 16th	Environmental Art	
	Early Spring Flowers	s
	Spring Bird Song	s
	Natural Sculpture	
	Family Fun	
	Beginning Spinning	
20th – 22nd	Maps & Trails	s
	Drystone Dyking	ss
	Mammal Society	
27th – 29th	Members Weekend	

MAY

NATS WEEKEND

18th – 20th	**Birds for Beginners**	
	Moths	
	Bats	
	Tree ID	
	Digital Art	
25th – 27th	Mosses	s
	Spring Birds	

JUNE

8th – 10th	Garden Structures	
	Grasses	
	Caled'n Pine Forest	s
15th – 19th	The Plant Hunters	
19th – 21st	Sustainable Building Skills	
22nd-24th	Orchids	
	Landscape Photography	
29th-1st	Coastal Plants	s
	Mire Plants	

JULY

1st – 5th	Mire Plant Ecology	
7th – 14th	Summer Birds	
	Mosses & Liverworts	ss
	Mountain Flowers	ss
14th – 21st	Highmoor's Landscapes	
20th – 22nd	Enjoying Butterflies	
21st – 28th	Freshwater Algae	
29th – 4th	Practical Algal Ecology	

AUGUST

3rd – 5th	More Butterflies	
	Wild Flowers	s
4th – 11th	Scotland on the Rocks	s
10th – 12th	Ferns	s
	The Power of Plants	
18th – 21st	Water Plants	
18th – 25th	Off the Beaten Track	ss
24th – 26th	People of the Glens	
24th – 28th	Lichens	
28th – 1 st	NVC	

SEPTEMBER

1st – 8th	Alan Outen's Fungi Wk	
	Botanical Illustration	
8th – 13th	The Deadly & the Delightful	
14th – 16th	Drove Roads	s
	Edible Fungi	
16th – 19th	Habitat Survey	s

OCTOBER

12th – 14th	Video Production	
	Maps & Trails	s
13th – 20th	Painting for Beginners	
	Autumn Birds & Scenery	
14th – 19th	Walks & Wildlife	s
19th – 21st	Scottish Mammal	
	Pictish Art	
	Digital Art	
	Hedgrow Basketry	
	Woodcarving	
20th – 27th	Scottish History	
23rd – 26th	CTC Understanding the Local Environment	
26th – 28th	Stickmaking	
	Weather Matters	
	Green Willow Working	
	Members Weekend	

NOVEMBER

5th – 8th	CTC Teamworking & Personal Efficiency	

s	Some degree of physical fitness required
ss	More physically demanding

Scottish Field Studies Centre,"Enochdhu", Blairgowrie, Perthshire PH10 7PG Tel: 01250 881286

OCTOBER RUNNING

The Highland Road's been sung before and will be sung again
So long as bards give thanks for good in the way of honest men;
And let who will be contrary, the lave will yet agree
And cry again, "The Highland Road, the Highland Road for me!"

Fife was a shadow across the Firth
When the Granton boat put out;
Over the sea and the solid earth
The mist lay all about;
But a rousing wind from the Isle of May
On the ruffled waters strode
And blew us a clear October day
To ride on the Highland Road.

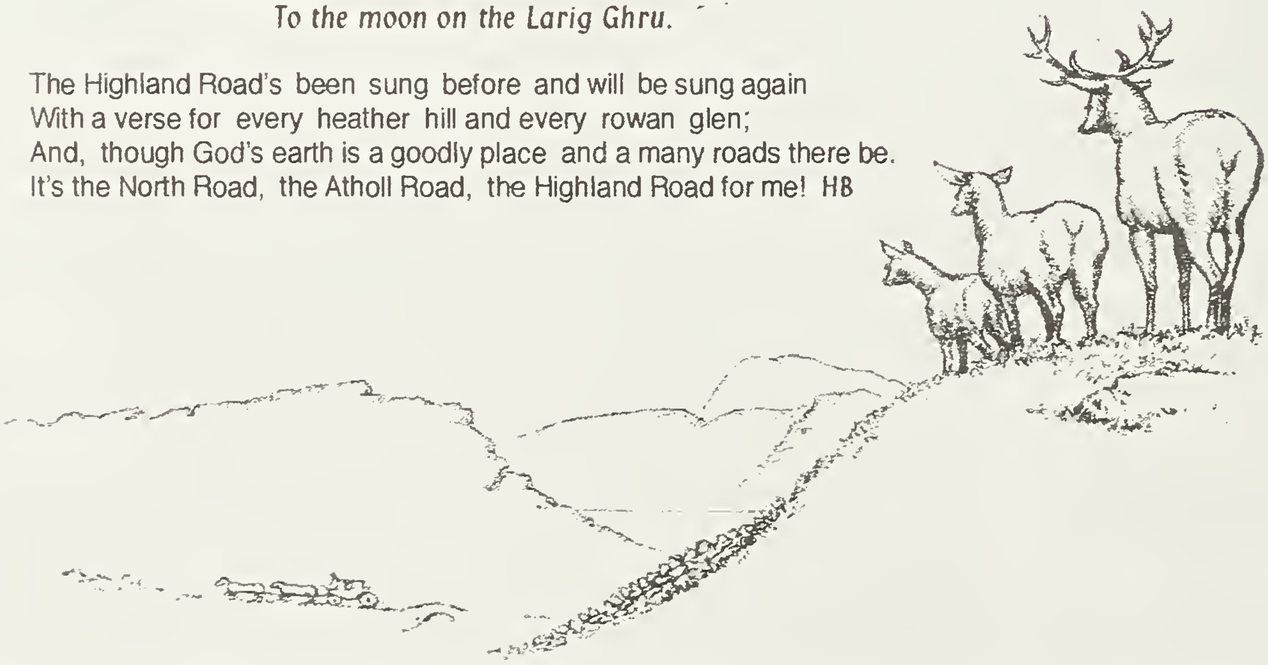
Loch Leven lay like a silver shield,
Glenfarg was amber and jet,
Earn ran grey in a harvest field
Perth was a moonstone set;
But the north hills beckoned us fold on fold
Till round Rohallion bend
Birnam in glory of russet and gold
Smiled like a long-sought friend.

Tummel and Tay ran hand in hand,
Farragon challenged us on
Through the old enchanted Atholl land,
Grim heart of Caledon;
And the laughing Garry led us a dance
By heather and rowans and rills
Till we saw the red deer watching askance
On the grave Drumouchter hills.

A minstrel wind from Badenoch sang
Laments for the waning day,
As from darkling Ericht the Truim sprang
To carry us down to Spey
By crags and corries and grey rock spurs
Where the steadiest head may flinch,
Till evening fell on the Laggan firs
And the sunlit birks of Insh.

Then thanks be given whate'er betide
That still as heretofore
A man may waken in Morningside
And couch him in Aviemore;
Thanks for the rare road running north
And a day that gave its due,
From the mounting sun on the Firth of Forth
To the moon on the Larig Ghru.

The Highland Road's been sung before and will be sung again
With a verse for every heather hill and every rowan glen;
And, though God's earth is a goodly place and a many roads there be,
It's the North Road, the Atholl Road, the Highland Road for me! HB



ON THE WAY TO KINCRAIG........

THE HIGHLAND ROAD

This little poem was found many years ago in an old copy of Punch and it still rings true today. When it was written the Forth was crossed from Granton and the surfaced road would have finished at Perth. The journey took a very long day - "From the mounting sun on the Forth, To the moon on the Larig Ghru".

Now that the journey is so much faster, usually under three hours, the trip has often been broken with time to explore, and in particular to look for stretches of the old Wade roads.

One may not necessarily appreciate the reason why General Wade was sent to Scotland, but there is no doubt that we have benefited enormously from the roads that he built, and during our stay at Kincraig we were never far away from them. They were so well built that they have lasted as easily found tracks to this day, although in many places they have been obliterated by the present day roads.

Having driven the road north many times, different parts of Wade's roads have been explored from time to time, sometimes alone and sometimes with NATS friends.

An early glimpse of a Wade road is at the south end of Pitlochry, on the left hand side, immediately before passing under the railway bridge. However there is a longer and more interesting stretch opposite the Calvine turning, running parallel to the present road but at a higher level. It is now used mainly as a farm track but it leads to a picturesque little bridge which was recently restored after many years of neglect.

A few miles further north one comes to the site of Wade's Stone, which was easily located before the dual carriageway was built. After several failed attempts to find it, two of us drove as slowly as we dared, map reading with care, and still failed to find the Stone on our way north. But, on the return journey we were successful and found the Stone in the 4th layby, and realised that it is out of sight when driving north.

One of the longest and best-preserved lengths of Wade road leaves the A9 at Etteridge, and continues north for several miles, only to be lost when nearing Ruthven Barracks. It makes an interesting walk and is a good cycle track, apart from a small stretch near the south end where the track has vanished into bog. Towards the north end one passes two phantom villages.

Possibly the best known of Wade's roads is the route over the Corrieyairack Pass by which Wade was able to move troops from Ruthven Barracks to Fort Augustus. Unfortunately heavy vehicles have done considerable damage to the track, in particular to some of the bridges and to the zigzag traverses which enabled horsedrawn vehicles to gain the height to the Pass. The route crosses the Spey at Garva Bridge. About a mile before the bridge at Garvamore one of the buildings is being restored by the National Trust. This building was probably used by General Wade when building the road.

ELIZABETH FARQUHARSON

WADE'S STONE

Being well briefed by Elizabeth Farquharson prior to driving south from Kincraig, Jean Galbraith and I stopped and found the Stone. It's on the 4th layby (Number 70) on the separated dual-carriageway of the A9. It was one of the marker stones on the original Wade Road. Wade, a very tall man, secretly placed a guinea on top of this stone. Returning a year later, to his amusement, the guinea was still there. Due to this, the Stone was singled out.

With the construction of the A9 the stone had to be moved. It was eight feet high, and the engineers took great care to place it as near as possible to its original position. Even the smaller stones were numbered and repositioned. The date of 1729 is original.

DOROTHY STUART

KINCRAIG

3RD - 8TH July

There couldn't have been a more idyllic setting than this one for a holiday. Fringed with sloping green fields and woodlands - coniferous and deciduous - Loch Insh is the most tranquil and peaceful place. Distant mountains, the tree lined Loch Insh and a tree clad island with reed beds nearby at the meeting of the loch water with the River Spey all combined to present a restful scene of magnificence as one crossed the River Spey on the edge of Kincraig. What joy to experience this as I walked to the water sports centre from my outpost in Kincraig to be collected for each day's expedition.

One of the loveliest and most picturesque sights in the locality is the series of waterfalls on the River Feshie at Feshiebridge, easily accessible from my hotel. Surrounded by forest, the water forced its way through a narrow rocky gorge, lapping at rocks streaked with coloured strata of vivid orange, red, white and pinky white. Our first excursion - to explore the River Feshie downstream from Feshiebridge - just happened to coincide with the local pastime by some youngsters of diving from the rocks into the deep pools of the river.

Further downstream the views up and down the river were most impressive - one of the most delightful river scenes I have come across. In the foreground, the sparkling river curved its way through great expanses of shingle beds, composed of the whitest stones I have ever seen. Beyond that it flowed on either side through pleasant woodland with the mountains as a backdrop. A dry river bed left as a result of the river changing course was situated nearby.

The highlight of the whole holiday came at the end of the first full excursion - to Loch Insh reserve. How thrilling it was to observe intense activity on the Osprey's nest high up on top of a tree on the island situated in Loch Insh, at the Kincraig end of the loch. We were fortunate to be there at the time of the year when the Ospreys had young to rear. Both the adult birds were there, the male one making frequent fish collecting trips while the female one stood guard above the nest. We saw it collect the fish from the male on his return trips and then feed it to the three offspring, which seemed to be a good size. From where we were on the edge of the graveyard, we could see very clearly any movement in the nest, especially when the young birds stretched upwards to be fed. It was such an exciting sight, that it was with some reluctance that we left the site.

Most memorable too was the sighting from the first hide, of a fox trotting around a mound and a deer so well hidden in the vegetation that it was difficult to see it until it raised its head. A Grey Heron was also visible. One of the most attractive parts of Loch Insh reserve was an Orchid field enclosed by woods and a river, and reached after passing through a pleasant woodland above the river.

At the reserve car park there occurred one of the light hearted moments of the holiday. A cockerel appeared to be part of the company. Some members were staying at a place where there were hens, so we all amused ourselves into assuming that the bird had hopped into a car as a stowaway and travelled with us down to the reserve. It certainly seemed very interested in everybody there. The warden soon put our minds to rest when he told us that it was a permanent resident at the reserve car park, just hanging around for titbits from people. That bird was so curious about us that it followed us to the hide so creating a most humorous scene - the party inside and the bird outside on the step looking in at us.

Lochans were a feature of two of the expeditions - perfectly situated to create in one feelings of relaxed contentment and absorb the picturesque tranquillity of the scene. The two lochans at Rothiemurchus were well concealed some distance into the woodland. Being surrounded by very undulating tree-covered ground, one came upon them suddenly after an enjoyable walk through the woods. Water Lilies floated on the surface and Goldeneye swam along sleeping as they did so. Coots with young were also seen. Common Wintergreen (*Pyrola minor*) was seen beside one of the lochans.

The lochan on Craig Meagaidh reserve above Loch Laggan nestled directly under the snow- covered slopes of Creag Meagaidh and was only visible as we crossed the small rise at its edge. The land immediately surrounding the still water was rich in botanical interest. Plants included Dwarf Cornel (*Cornus suecica*). Other plants seen either at the lochan or on the way up were Mountain Everlasting (*Antennaria dioica*) and Alpine Bistort (*Persicaria vivipara*). The whole reserve covers a wide range of habitats and from the path to the lochan at the top of the reserve splendid views of Loch Laggan opened up. For spectacular mountain scenery the reserve is unsurpassed.

THE OSPREY AT KINCRAIG

Glen Feshie was also a place of grandeur. It was a most varied valley walk with open stretches, woodland with scattered trees and more densely packed woodland hemmed in by the towering steeply sloping mountains. The river itself flowed gently along in a deceptive manner for at some of the bends the water was powerful enough to erode away the banks. There were signs warning walkers to keep away from the edge for this reason. Further up, the path itself was eroded in a few places where it clung to the hillside above the river.

The ultimate goal of the Glen Feshie walk was to find the Wood Vetch (*Vicia sylvatica*) (white or pale lilac flowers with purple veins), which was to be found beyond the last major woodland on the way. The plant was spotted next to the path high above the river just after the path had levelled out after its steep climb out of the wood. Nearby the glorious yellow of the Yellow Mountain Saxifrage (*Saxifraga aizoides*) brightened up virtually the whole length of a long rocky gash in the hillside.

Ahead the views up the valley were majestic. One point of interest further down the valley lay in the site of the house where Landseer, the famous painter of Scottish wildlife in its natural setting, resided. Now only the chimney piece remains, surrounded by thinly spaced woodland.

Like the Creag Meagaidh walk, the formation of the land compelled the path to make a sharp turn to the left so making it intriguing to discover what was around the corner. Birds seen before the turn of the path included Oystercatcher, Meadow Pipit and Grey Wagtail.

On a purely personal note, I amazed everyone by the exotic lunches I carried with me on the walks. I became quite a talking point and it was amusing for us all to see what I would pull out of the bag next. I was entertained by the looks of surprise on people's faces. Good fun, indeed. My lunches were more like a banquet - a paper plate laden with cold chicken, an unusual and interesting salad and even every conceivable form of dressing and seasoning in nice little packets. I think I must be the first person to enjoy such high living in an outdoors setting. And then, at the end of the walk very special evening meals in my hotel which provided my packed lunches.

RODDY CLARK

Roddy lunching on Creag Meagaidh !

KINCRAIG WEEK - THE BIRDS

INSH MARSHES

The visit to the hides at the Insh Marshes was a bit disappointing for birds. We saw Black-headed Gulls, a Carrion Crow, a Robin feeding her young, Curlew and a Grey Heron, and heard Greylag calling. At Tromiebridge Meadows we were entertained by families of Wrens, Blue Tits and Willow Warblers. Lapwings flew overhead. At Balnacraig there were mixed flocks of Long-tailed Tits, Blue, Great and Coal Tits - over one hundred in all, flying around in the trees above the marshes. We also saw a Spotted Flycatcher, Buzzard and a Heron.

Glenfeshie

Glenfeshie is a magical place, where nature has the upper hand. As we walked up the glen and across the rickety bridge we saw Wheatears flitting about, Sand Martins flying in and out of the sandy fallen-away river bank, Grey Wagtails by the river. Among the Whin and Scots Pines there were Great Tits, Coal Tits, and Blue Tits. We saw Redstarts, Willow Warbler and Spotted Flycatcher.

The twittering, chattering NATS moved slowly up the valley to Ruigh-aiteachain Bothy (Landseer's) and left Mollie and Andrew peering among the scattered old Scots Pines. They were especially lucky to see Crested Tits - the special highlight of Mollie's holiday, since it is found only in a very limited area. There was a Ring Ousel on the rocky scree and Goldcrest in the trees - a delightful day for plants people and birdwatchers alike.

INFORMATION ABOUT THE BIRDS FROM MOLLY WOOLGAR

A WEEK AT LAGGANLIA

The excursion programme started off on Monday, 3rd July with the whole party meeting at Feshiebridge car park for a picnic lunch. Afterwards on a hot, sunny afternoon we had a lovely walk before splitting up.

Our group, nine in all, were going to stay at Lagganlia, the City of Edinburgh's Outdoor Centre in Glen Feshie. At the Centre there are nine Lodges, well spaced out with good roads. We were in SGORAN which is two lodges with a central conservatory.

As we were self-catering, we'd brought all our food with us, so the first job was to pack the fridges as necessary with dated items. Food to cover all our meals had been carefully arranged beforehand. Individually we took our own breakfast cereals, fruit and food for midday lunches. Staple food i.e. bread, milk, butter etc. was collective eating. Four evening meals had to be covered by members doing perhaps a main course or a sweet. The evening meals were varied and enjoyed by all. The cost for the self-catering was sorted out by Janet Watson on the last evening.

The others from our party were staying in nearby March House and joined us about 9pm on the first evening. This meant that we all got more information about the busy time ahead; a very useful discussion.

The lodge was not fully occupied by us with eight bedrooms (twin) and only nine in the group it meant only two people had to share a room. We used one lounge mainly and found the seating comfortable. There was a selection of books from our own NATS library (brought by Mary Clarkson).

Good kitchen equipment and many hands meant that the meals went smoothly. The dishwasher was a great luxury! Those lodges all have drying rooms, which luckily we didn't need. That is a facility generally missing in hotels. With two bathrooms and two shower rooms, we did all right. It was very pleasant to return after a busy day, have a cup of tea and a chat before preparing and helping with the evening meal. *

As our two leaders on the Upper Glen Feshie walk on the Wednesday were dining out in style at March House, it was decided that the rest of us would head for Aviemore that evening. Elizabeth Farquharson suggested a restaurant known to her as the 'Happy Haggis'. Here we deliberated over a varied menu especially the luscious sweets. That evening there was a power cut in the district, so it was early to bed. Our own torches were useful - Lagganlia had the situation well covered with emergency lighting in the corridors etc. Power was restored during the night.

On the final morning at breakfast we were all treated to the appearance of a Red Squirrel right in front of our lodge on the ground. That was a bonus!

DOROTHY STUART

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* We did have a sherry and nibbles too; very civilised. And wine with our meals! Ed.

INSH MARSHES THE PLANTS

Tuesday

Although Insh Marshes are a bird reserve and it is for birds that they are well known to the general public, the plant life of the reserve is also very rich, not, perhaps, surprising as this is the largest area of floodplain wetland in Britain. In summer, orchids are abundant and 26 different species of sedge have been found on the reserve.

Invertromie Meadow, the first area which we visited, was carpeted with wildflowers. Fragrant orchids (_Gymnadenia conopsea_) were particularly plentiful and their perfume filled the air as we walked past. Nearby were Heath-spotted Orchids (_Dactylorhiza maculata_) and Greater Butterfly Orchids (_Platanthera chlorantha_) so that we were able to examine the differences between them. We argued over whether we were looking at Wild or Mountain Pansy (_Viola tricolor_ or _lutea_) and were delighted to find Goldenrod (_Solidago virgaurea_), Melancholy Thistle (_Cirsium heterophyllum_) and, in the wood behind, a few flowers of the dainty Chickweed Wintergreen (_Trientalis europaea_) in bloom some weeks after its normal time. A wet patch by the burn yielded a variety of sedges and, on the slope above, the slender Beech fern (_Phegopteris connectilis_). It was with some reluctance that we returned to the banks of the Tromie for lunch in the sunshine.

Orchids in the morning, sedges for the afternoon and we repaired to a marsh at the southern end of Loch Insh to look for these. The marsh was more or less a shallow lochan with sedges and rushes from end to end. We knew that this was one of the two Scottish sites for the rare String sedge (_Carex chordorrhiza_) but none of us, not even the ranger who accompanied us, knew exactly where it grew, nor did we know exactly what it looked like. Searching was evidently going to be a paddle and those without wellies or not 'into' Sedges took the opportunity of having a walk in an area not normally open to the public. The rest of us waded in. There were certainly plenty of Sedges, Bottle, Bladder, Slender, Water, White, Star (_Carices rostrata, vesicaria, lasiocarpa, aquatilis, curta, echinata_) to mention but a few and lots of rushes too. Someone spotted some distinctive leaves and these were identified as those of Cowbane (_Cicuta virosa_), an unusual and very poisonous umbellifer. We started to look for Sphagnum, as the Sedge book said that _Carex chordorrhiza_ grew with this, and soon our efforts were rewarded, for there was the Sedge, tiny and unprepossessing but looking just like the picture in the book with shoots arising from the string-like decumbent base of the flowering stem, but growing in some quantity. A satisfying day indeed.

MARY CLARKSON

COWBANE

Cicuta virosa

UPPER GLEN FESHIE

Wednesday

What a start! On the way we came face to face with heavy vehicles resurfacing the single track estate road and drivers had to do some tricky manouevering before parking their cars further back than intended. That left a bit of a hike to the rickety bridge where only 1 or 2 people at a time could cross. All safely over, those who had chosen to potter and botanise followed Mary Clarkson to the interesting plants. We found Alpine Lady's Mantle (_Alchemilla alpina_), Field Gentian (_Gentianella campestris_), Butterwort (_Pinguicula vulgaris_), Sundew (_Drosera rotundifolia_;) Bog Asphodel (_Narthecium ossifragum_), Bell Heather (_Erica cinerea_) and Cross-leaved Heath (_Erica tetralix_) in flower and Lousewort (_Pedicularis sylvatica_.). Also, washed down from higher up, were 2 saxifrages , Starry and Yellow Mountain (_Saxifraga stellaris_ and _S. aiziodes_).

Near the bothy the Juniper clad slopes yielded leaves of common lowland species like Wood Sorrel and Wood Geranium, also the dainty Oak Fern (_Gymnocarpium dryopteris_) under the bracken. We were surprised to find that most of the trees were Aspen, not Birch.

All that now remains of the cottage where Landseer is thought to have painted Monarch of the Glen (and may have secretly entertained the Duchess of Gordon) is one tall chimney. In this area came the find of the day-11 plants of Moonwort (_Botrychium lunaria_).

Fungi were limited to _Boletus erythropus_ and the tiny Bog Lantern (_Mitrula paludosa_.). Some people were lucky enough to see 3 hares on the way back.

JEAN MURRAY

CREAG MEAGAIDH

Thursday

After some close attention to the areas near Feshiebridge and Insh in the earlier part of the week, Thursday took us away from the Spey and its tributary to the National Nature Reserve at Creag Meagaidh, thirty miles or so away, on the road through to Spean Bridge.

Lucy Grant, the Assistant Warden, ably introduced us to the site. Her youthful bloom contrasted with the more mature complexions of those around her! We were pleased that the fact that she was just moving out of her house to make way for the television crew making 'Monarch of the Glen' at Ardverikie Castle on the other side of Loch Laggan did not prevent her from fulfilling her engagement with the NATS.

The owner of the estate at the time of the '45 was Cluny Macpherson, and land was farmed by crofters, living in clachans or 'ferm touns'. Cluny cast his lot with the Jacobites and when the cause of the Young Pretender was lost at Culloden, dreadful vengeance was meted out on the people of the Highlands by Bloody Cumberland. Cluny Macpherson, like many other land-owners had to flee to the continent. His lands were forfeited and came under the control of government-appointed Commissioners. It was they who cleared the tenants and created a unified sheep farm. By sometime in the 1780s those who had had Jacobite sympathies were forgiven and were able to reclaim their lands. Sheep however remained, though in the mid-19th century part of the estate was turned into a sporting estate with introduced deer, grouse and fishing, and part given over to forestry.

The estate passed to the Ramsdens in 1929 when the Macphersons finally sold up. There were further changes of use and ownership until in 1985 part of the Moy Estate to the north of Loch Laggan, which had been notified as an SSSI in 1975, became the Creag Meagaidh National Nature Reserve.

From Aberarder Farmhouse, the NNR Administrative Centre, the path to Lochan a Choire in Coire Ardair followed the burn, becoming more twisted and more demanding as we progressed.

Everywhere there were signs of the regeneration that has occurred since the area became an NNR and strict control of the deer population was introduced. Young trees were appearing above the heather cover, there were new woodland areas created by natural regeneration and the brightness of swathes of wild flowers added interest to the walk as we snaked onwards and upwards. A glorious patch of purplish Wood Cranesbill (*Geranium sylvaticum*) was succeeded by yellow Globeflower (*Trollius europaeus*), Wild Hyacinth (*Hyacinthoides non-scripta*), Heath Spotted (*Dactylorhiza maculata*) and Fragrant Orchids (*Gymnodenia conopsea*), and Scottish Asphodel (*Tofieldia pusilla*), all in substantial quantities, while less obvious plants of Sundew (*Drosera rotundifolia*) Butterwort (*Pinguicula vulgaris*), Alpine Bistort (*Persicaria vivipara*), and Starry Saxifrage (*Saxifraga stellaris*) were spotted.

Lunch came, not before time, and a long rest was enjoyed by all. Perhaps the rest was too long for the afternoon was quite advanced by the time the lochan was reached. That however did not deter some members of the party going on further, particularly to find what grew on the accessible (or near-inaccessible) parts of the cliffs behind the lochan. But for those anxious to return for dinner at the usual eating hour, there was little time for rest. The trail back to the parking area seemed longer than it had earlier in the day. NATS arrived back at the cars in dribs and drabs according to their fitness, and it was some time before, eventually, the journey back to Glen Feshie could begin.

It was a day of consuming interest, in fine weather. For some it was also a day of considerable achievement and no doubt their muscles realised that next day.

ANDREW GILCHRIST

ROTHIEMURCHUS

Friday

After the exertions of Creag Meagaidh, we enjoyed a gentle morning's amble around part of the Rothiemurchus Estate in the company of Scott Henderson, an estate Ranger. He explained how several organisations were concerned with the management of the estate in conjunction with the Grant family, the owners for the past 400 years. The consortium aims to achieve a fine balance between the provision of recreational and educational facilities and the maintenance of the Highland environment. Situated in the foothills of the Cairngorms massif, the estate offers the visitor a varied landscape of woodland, rivers, lochs and remnants of the ancient Caledonian Forest.

We first walked across a large area of moorland, designated for natural regeneration since the 1980s. Dotted amongst the heather were small saplings of Birch and Scots Pine, some showing signs of deer depredation. It is estimated that regeneration of the forest will take about 50 years. We then entered a forested area and, standing beside a huge anthill, we were treated to a dissertation on the merits of the wood ant (Formica sylvestris). This creature provides a key to the health of the forest, living as it does on aphids and other tree pests. It was interesting to learn that the ants bring the eggs to the surface of the anthill during the day for warmth, burying them again at night.

On the nearby lochan were a family of Coots, 3 female Goldeneye and one Little Grebe. Water Lilies were abundant and, in the surrounding vegetation Bottle Sedge (Carex rostrata), Common Sedge (C. nigra) and Branched Bur-reed (Sparganium erectum) were noted. We were hoping to catch sight of some Roe Deer in a large hollow glade, known to be frequented by them, but without success. Families of Roe Deer tend to favour Birch woods, whilst the Red Deer, moving in herds, keep to the pine woods and higher ground. Management of the Deer population on the estate is maintaining it at a level of some 400 animals, in keeping with the available foraging grounds and general health of the Deer.

On return to Inverdruie, few could resist a stop at the well-appointed Visitors Centre with its tempting comestibles and cards. Our thanks are due to Scott whose fund of anecdotes and local information gave us an insight into the practicalities of husbandry on a Highland estate.

MARGARET PERRY

BRANCHED BUR-REED

Sparganium erectum

My Kincraig holiday was TOPS

Firstly, because of THISTLES: the tall, bold Melancholy ones (Cirsium heterophyllum) which I had never seen before and which made me feel the very opposite of melancholy. Twinflower also was an exciting first for me. Shown to us on our 'extra' last outing to Glenmore by the enthusiastic Ranger Pete Moore.

Secondly, because of ORCHIDS: Greater Butterfly (Plantanthera chlorantha) with its long, long spur and Fragrant (Gymnadenia conopsea), its lovely scent carried on the breeze.

Thirdly, because of PEOPLE: all those nice NATS who talked, walked, ate or sat beside me at various times during the holiday and shared their knowledge and pleasure with me.

Fourthly, because of SEDGES, SAXIFRAGES and SORREL: we found the unusual Water Sedge (Carex aquaticus) and String Sedge (Carex chordorrhiza) after being directed to the right place in lush marshes by the Ranger, and then, thanks to Mary Clarkson's sedge knowledge and sharp eyes. I must mention too, that scarce plant: Cowbane (Cicuta virosa) discovered there by Margaret Little who was wading gamely through the marsh next to me and who pounced on the unique leaves, the shape of which I had fallen for years ago when gazing wonderingly at the Umbelliferae illustrations in my wild flower book, longing to see them growing some day. Thank you, Margaret! In Upper Glenfeshie, Saxifrages gave great visual pleasure: Yellow Mountain Saxifrage (Saxifraga aizoides) and the beautiful Starry Saxifrage (Saxifraga stellaris), so familiar to hill climbers but not to me. Here too, Mountain Sorrel (Oxyria digyna) with its kidney-shaped basal leaves was introduced to me for the first time by Mary Clarkson.

So, yes, my Kincraig Holiday was TOPS! Thanks!

MARY TEBBLE

MOUNTAIN FLOWERS FROM KINCRAIG

As hill-walkers of many years' standing, Sandra Stewart and I are interested in upland flowers and, as part of the Kincraig excursion, we visited Coire Ardair on Creag Meagaidh and Coire Garbhlach above Glen Feshie, both well known for their alpine plants. Neither visit was entirely successful as we had only a short time to spend in Coire Ardair and the afternoon in Coire Garbhlach was a wet and windy one quite unsuited to clambering about on rocks. We did not find any great rarities, but plenty enough to whet the appetite for return visits.

COIRE ARDAIR

The party had spent most of the day reaching Lochan a'Choire, nestling at the head of Coire Ardair, and had seen many plants unfamiliar to those who do not normally walk in upland areas. It seemed a pity, however, not to have a look at the foot of the cliffs above the lochan for it is places such as this, out of reach of grazing animals and free from competition from more robust vegetation, which are richest in alpine plants. Sandra and I set off uphill. As usual, the area we were aiming for was farther off than it looked and the terrain was steeper and rougher, but our efforts were rewarded. Among the many plants we saw were Frog Orchid (_Coeloglossum viride_), Alpine Saw-wort (_Saussurea alpina_), Mossy Saxifrage (_Saxifraga hypnoides_), Holly Fern (_Polystichum lonchitis_), and Alpine Lady-fern (_Athyrium distentifolium_). Our allotted time whizzed past and with reluctance we headed downhill for the drive home and supper.

COIRE GARBHLACH

The flora of the Cairngorms as a whole is that of an acid mountain with large stretches of moorland vegetation. In one or two places, however, there are small outcrops of mica-schist and these carry a much more interesting flora. One of these areas is Coire Garbhlach above Glen Feshie and it was to it that Sandra and I made our way after the rest of our party had left for home. Clouds were gathering as we walked across the moor and the rain started as we entered the narrow part of the valley of the Allt Garbhlach. Dippers and Grey Wagtails accompanied us by the burn, each on his own stretch, while Wheatears abounded on the moor and Ring Ousels were heard, and spied, amongst the rocks higher up. There was a great variety of flowers, ferns, sedges and rushes all the way up the valley so that we did not notice how heavy the rain had become or that a strong wind had sprung up. When we reached the head of the corrie, however, the rocks were running with water, we were soaked through and it was difficult to keep our footing. Of course, it was here that the most interesting plants grew! After a short time slithering about we called it a day. Our plant list was a long one and included Alpine Mouse-ear (_Cerastium alpinum_), Northern Rock-cress (_Arabis petraea_), Alpine Willowherb (_Epilobium anagallidifolium_), Moonwort (_Botrychium lunaria_), Spiked Wood-rush (_Luzula spicata_), and Three-flowered Rush (_Juncus triglumis_). As we squelched downhill, we wondered whether we should have postponed our visit to Coire Garbhlach for 24 hours. Our comfort came the following day which produced unrelenting heavy rain from morning to night!

MARY CLARKSON

MELANCHOLY THISTLE

Cirsium heterophyllum

A tall handsome alpine thistle seen at Balnacraig, Invertromie Meadow and in Glenfeshie

DWARF CORNEL

Cornus suecica

Another attractive Alpine plant growing in abundance by Coire Ardair

WINTER MEETINGS 2000

Wednesday. 26th JANUARY

Plants of the Lothians

Douglas McKean

Who better to lecture on this subject? Douglas is in charge of the British flora at the Botanics herbarium, and has been intimately involved in the 'Flora of the Lothians' project run by the Botanical Societies of Scotland (BSS) and the British Isles (BSBI). His approach was to review the Lothians' more interesting plants habitat by habitat - woodland, rocky sites, wetlands, and the coast.

Considerable attention was paid to Holyrood Park, with its surprisingly rich flora, and for me the evening was memorable for a number of surprises, perhaps indicating my ignorance of recent events in local botany. I had no idea, for instance, that Adder's-tongue Fern (Ophioglossum vulgatum) exists in considerable numbers, about 2000 plants in the Hunter's Bog area, perhaps benefiting from the absence of sheep and rabbits. This addition to the park's flora is one of the successes of the recording by the Scottish Wildlife Trust.

Other Arthur's Seat plants are Mountain Everlasting (Antennaria dioica,) with its silvery leaves, and Maiden Pink (Dianthus deltoides,) also known in Edinburgh at Craigmillar Golf Course and Craiglockhart Hill. Douglas remarked that at the latter site it has almost been killed off by recent tree planting; I hope he didn't mean the ones planted by our members. Other Holyrood Park specialities are Dropwort (Filipendula vulgaris), Spring Cinquefoil (Potentilla neumanniana) on the basalt, and the rather-too-attractive purple Sticky Catchfly (Lychnis viscaria,) which survives there but has been supplemented by plants propagated at the Botanics from locally collected seed. The Catchfly used to grow on Blackford Hill, but disappeared through collecting (hence the 'rather-too-attractive') when the hill passed into public ownership. A tiny but attractive flower found on Arthur's Seat is Spring Sandwort (Minuartia verna)- formerly also on Blackford Hill. Wood Vetch (Vicia sylvatica) clings on at the base of Salisbury Crags; it is otherwise known from the East Lothian deans, growing in shade. One of the few woody species of interest in the park is Rock Whitebeam (Sorbus rupicola). It is now being propagated at the Botanics, though the seed has proved difficult to germinate; three plants have been returned to the wild.

Despite its botanical riches, Holyrood Park has suffered some losses. Hooker's Flora mentions Thyme Broomrape (Orobanche alba) on Arthur's Seat, though it has not been found since and the record may be erroneous; and Bog Pimpernel (Anagallis tenella) disappeared from Hunter's Bog when it was drained, though it is still to be found at Aberlady. But as the Adder's Tongue illustrates, we should perhaps not give up hope: old records may reappear, or new species may appear for the first time. Many species have, after all, a wonderful capacity to get around. Douglas speculated that the Northern Yellowcress (Rorippa islandica) arrived at Bavelaw from Iceland, courtesy of the migratory geese. Various unexpected plants have turned up on the West Lothian bings, such as Common Wintergreen (Pyrola minor). And only very recently the annual Rue-leaved Saxifrage (Saxifraga tridactylitis) has been discovered on Blackford Hill.

Another reason for optimism with regard to our local flora is that people generally are more aware of it now, and there are also active moves to conserve it. The local biodiversity action plan includes 29 higher plant species, and Douglas mentioned several, including Cornflower (Centaurea cyanus) and Fellwort (Gentianella amarella.).

Many other species were reviewed in the course of the evening, including the New Zealand Willowherb (Epilobium brunnescens), which was first seen in this country in a Craigmillar garden in 1905, and now occurs in most parts of the UK. It is hybridising with native species, and Douglas has recently been honoured by the BSBI and Wild Flower Society for his work on Willowherb hybrids.

Our floristic tour ended with a few more surprises - a well-known fig bush, growing in the bank of the Water of Leith at Warriston, and a red hot poker (Kniphofia) in Douglas's garden - planted of course, but he once had a woodpecker feeding on it!

GH

Wednesday. 23rd FEBRUARY

Moby and other stranded whales & seabirds affected by oilspills

Dr Andrew Kitchener

Formerly at the BBC Natural History Unit, Andrew Kitchener is now Curator of Mammals and Birds at the Museums of Scotland (Royal Museum, to those of us who prefer the old names). We were warned at the start that the talk would not be confined to stranded whales and oiled seabirds, and in fact we were treated to a quick-fire treatment of a wide range of projects going on at the Museum.

A brief historical review of the Museum and its collections - including the story of how it acquired the skeleton of the Blue Whale stranded at North Berwick in 1831 - brought us quickly up to date with how specimens are collected nowadays. The collections are indeed still growing, despite the Museum having already about 125,000 bird and mammal specimens. Animals are no longer shot to provide accessions, but there are alternative sources in the form of animals found after being killed or dying through natural causes - from roads, the shore, zoos, and so on. We were asked to send or take any specimens of possible interest to the Museum, accompanied of course by a careful record of the date and site of the find, and any other relevant information.

Quite apart from the traditional museum uses of specimens for display and taxonomic research, new uses are now becoming more prominent. They can for instance serve to monitor pollution by measuring pesticides and heavy metals in tissues, hair and feathers of old and new specimens; bones can be examined to assess incidence of diseases now and in the past, such as canine distemper in seals; hybridisation can be studied by careful examination of museum skins and skeletons - and Andrew described in some detail his research into hybridisation between the Scottish Wild Cat and domestic cats, showing that they are distinct forms and that hybrids can generally be recognised. In his (entirely prejudiced) opinion, the wild cat is by far the superior animal of the two, with its much larger brain.

As examples of animals found dead and wanted by the Museum, stranded seals and cetaceans are prime targets. The biggest recent example must surely be 'Moby', the Sperm Whale that was stranded in the Forth in April 1997. At c.50' long and weighing 38 tons, it was no easy task to collect the skeleton. Their first job was to remove the lower jaw - to prevent the teeth being taken for scrimshaw (I had to look that up in the dictionary; 'origin obscure', it said). Then the carcase was dismembered and eventually the bones washed beautifully ('persil') clean in ordinary domestic detergent. Interestingly, Moby turned out to be a mature male, about 42 years old (from growth lines in the teeth), and he died from natural causes. We were left on tenterhooks about the causes: Andrew wasn't telling, since they were going to announce their findings shortly in a blaze of publicity.

The Museum is part of a coordinated programme of recording stranded cetaceans, and collects specimens from further afield than just Scotland. They are finding, for example, that strandings of Striped (or Blue-white) Dolphin (*Stenella coeruleoalba*) are now relatively common; it is a Mediterranean species, and perhaps this indicates that the sea is warming up. A particularly exciting stranding occurred in Cardigan Bay in 1993: it was at first identified as a Sowerby's Whale (*Mesoplodon bidens*), but when the skull was cleaned it turned out to be a Blainville's Beaked Whale (*M. densirostris*) - 1500 km further north than any other record.

Oil spills provide another source of museum material unpleasant to handle, and tragic for the victims, yet a useful way of finding out more about the natural history of both little known and common species (perhaps also 'little known'). A vast number of birds of many species were collected from the Braer disaster in Shetland and these could be used to collect information about parasites, disease incidence, and other characteristics difficult to study by any other means. The Museum has the largest collection anywhere of Great Northern Diver, for instance, and study of the skeletons and wing length has enabled an assessment of gun-shot damage in different breeding populations (which are separable by wing length): the overall incidence was 34% - far too high, considering that it is supposed to be a protected species.

We were left in no doubt that the Museum still has a useful role to play in learning more about Scottish wildlife.

GH

Wednesday, 22nd MARCH

Scottish Moths
Dr Keith Bland

In his talk Keith managed to combine a general introduction to the Lepidoptera, suitable for beginners, with all kinds of esoteric information about Scottish moths, and in particular their life histories. While about 2,500 species occur in the UK, in Scotland we have only about 1700, including a dozen or so butterfies.

The distinguishing features of the Lepidoptera are the long proboscis (although some 'primitive' species have jaws), and scales on the wings. In discussion afterwards we learnt that the original function of the scales was probably to make the insect slippery, since the scales fall off easily and make it difficult for birds to grasp them. Caddis flies are another insect group with scaly wings, although the scales tend to be hair-like rather than in the form of small plates.

Most of Keith's beautiful slides were of the caterpillar and adult stages. The caterpillars in particular show tremendous variety in both colour and structure, as to be expected from the variety of ecological niches they occupy and their corresponding lifestyles. There are the looper caterpillars imitating twigs, with a reduced number of abdominal legs; the brightly coloured caterpillars that contain toxins; the hairy or even woolly ones, with viciously barbed hairs which dig into your skin and cause urticareous rash; the leaf miners, which create such characteristic patterns of tunnels in leaves; the caterpillars that feed on dead leaves on the ground, and others that gain their sustenance from dead bees or other caterpillars, or fungi, or are in turn consumed by other fungi. One Plume moth caterpillar detoxifies Wood Sage before eating it, by first biting part-way through the stem and leaving it for a few days. Beautiful and fascinating though the adult moths are, I came away from the evening feeling that the caterpillars were far more interesting.

The little white cigar-shaped cases protruding from the fruiting heads of Juncus rushes are made by caterpillars of a small moth called Coleophora alticolella.. (Relief! No more sleepless nights.)

GH

Wednesday, 26th April

MEMBERS NIGHT

In the first part of the evening we had three short talks - by Geoffrey Harper on 'Flowers of the Kola Peninsula'; Betty Smith on 'Dragonflies of the Lothians'; and Eunice Smith on 'Biodiversity'.

After that there was an extended tea break with time to drink tea; buy books, plants and home-made jam; see the exhibition of photos; learn about the Seabird Centre at North Berwick and buy raffle tickets. A microscope had been set up to show a rare fungus which looks like a red pepper, and which had been found by a number of members of the Society at Beecraigs, Lauriston Castle and David Adamson's garden. There were also leaflets laid out about holiday courses, guided walks etc.

This was followed by two slide shows, with Jackie Muscott showing us the wild flowers of Cornwall; and finally Elizabeth Farquharson taking us on a trip to Holy Island.

Wednesday, 27th September

Ladybirds - the Good, the Bad, and the Ugly
Irene Geoghegan

Irene kindly agreed to write an article for the Journal.

Wednesday, 25th October

Plantlore
Donald Manson

It was a pleasure to welcome back Donald and Cathy Manson: he was president of the NATS in the late '80s, but was regrettably called away to Yorkshire in mid-term.

In recommending the study of plantlore Donald pointed out that it is an excellent way to fill the winter evenings, when direct observation of most plants is impossible. An hour's informal talk can hardly do justice to this vast subject, so he merely dipped into various fields such as plants as food, the names of plants, and flowers in literature - with quotes from Burns (daisy), Wordsworth (daffodils), Scott (violet), Goldsmith and Coleridge (primrose), and Shakespeare (thyme, gorse, nettle, oak, rose, and something he called 'burr'). How many of them can you recite from memory?

Then there were plants as poisons, and plants as medicines, though he didn't have time for plants as cosmetics, or their use in children's games. For me the most interesting example was the leaf of Tutsan (Hypericum androsaemum,) known also as 'Bible Leaf', used as a book marker. Now, why should its leaves be especially suitable? Incidentally, nature photographers' wives have an important function, which strangely is not mentioned in some textbooks of photography. Given suitable size and aerodynamic qualities they form excellent windbreaks, if they can be persuaded to lie down just upwind of the subject.

We were left with a puzzle - and if any reader has the answer, or even a plausible suggestion, I am sure Donald would be pleased to hear about it. Apparently the Oak is called 'Tom Paine' in Yorkshire, presumably after the author of The Rights of Man. But what is the connection?

While most of the talk was as advertised - on plants, their uses and lore - an interlude was devoted to slides of the NATS excursion in 1999 to Arnside and Silverdale, when Donald and Cathy joined the explorers of the limestone pavements. Another departure was Donald's understandable indulgence right at the very end - showing us a few slides of his favourite flowers, even if useless and loreless. He showed very good taste in ending up with the Twinflower (Linnaea borealis).

GH

Wednesday, 22nd November

Bird Biodiversity in the Firth of Forth
Peter Gordon

As one of Britain's largest estuaries, the Forth is of particular importance for its waders and wildfowl, and has been recommended for Special Protection Area (SPA) status. Peter comprehensively reviewed its bird life by taking us through the main habitats represented - noting with regret, in passing, that farmland and Leith Docks are not included in the SPA. The former provides feeding for geese, and the latter contains the UK's largest Common Tern colony.

The principal habitats are sheltered bays (Gosford, Gullane and Largo), mud, saltmarsh, rocky shore, and cliffs. All, except perhaps the last, provide feeding for various groups of birds. The mud is particularly rich in invertebrates, such as worms and molluscs, supporting waders and some duck. Remaining unfrozen during the winter it supports vast numbers of birds, in the winter particularly, and this accounts for the Forth's international importance.

Under some threat is the saltmarsh found higher up the shore. It provides a breeding habitat for Redshank, and a grazing experiment is to be undertaken at Aberlady in an attempt to improve the saltmarsh, by altering its vegetation and invertebrate fauna. There are threats to saltmarsh in the neighbourhood of Kincardine Bridge, on account of both the building of a new bridge and subsidence caused by the expected expansion of Scotland's last deep coalmine under the river and beyond. Another threat comes from a rise in sea level, since it now seems likely that the sea is rising faster than the land. The problem arises from the presence of sea walls, which would prevent saltmarsh developing naturally at a higher level. So there are plans for 'managed retreat', involving removing or breaching sea defences to enable areas of former saltmarsh to be reclaimed.

Less problematic are rocky shores - favoured habitat of Oystercatcher, Turnstone and Purple Sandpiper - and cliffs. While Gannets on Bass Rock have increased to about 29,000 occupied sites, Kittiwakes are declining. The latter are now being used to indicate the size of Sand Eel stocks: if Kittiwake productivity decreases too much the fishery is closed - a striking example of how our well documented bird populations are being used in a very practical way to monitor the health of the environment. That must be a good thing, though we may have mixed feelings about the 30-40 thousand Scaup no longer seen on the Forth, having disappeared when the discharge of spent grain was stopped. Peter inclined to think that improved water quality had to take priority.

In optimistic mood, he concluded that Ospreys might soon be seen feeding at Aberlady and Cramond, though the prospect of Sea Eagles nesting once more on Bass Rock was somewhat more remote.

GH

Saturday, 9th December

WINE and CHEESE PARTY

Once again NATS and their guests spent a very enjoyable evening at 6 Chamberlain Road, eating drinking and chatting. The evening raised quite a considerable sum (£90.20, the largest amount yet) for the Excursion Committee. Our thanks to Elizabeth for her generous hospitality.

Going home after Members Night in April I was faced with a long queue of traffic in Colinton Road. The road was flooded just east of the village and the cars seemed to be waiting for the waters to subside. Impatient as ever, I did a wheelie and tried Colinton Mains Road. It too was flooded, so I took a side road and got through, though the water was up to my gunholes! Further on, Redford Road was closed because the Bonaly Burn had burst its banks at the bridge and was pelting down the main road like a raging torrent. I had to abandon my car and was rescued by the Army, who took me (and a few others) in a large jeep, through the torrent. Many houses in Redford Road and Redford Avenue were flooded out that night.

Sandra Stewart

ACKNOWLEDGEMENTS

The Journal editors thank all the contibutors for producing such a variety of articles. Special thanks are due to Eric Perry and Jackie Muscott for their many beautiful drawings. Our thanks must go to the Journal Committee for their meticulous attention to detail when checking the final output.

EDINBURGH NATURAL HISTORY SOCIETY JOURNAL 2001

There must be much undiscovered talent among members and friends. Articles, observations, sketches, cartoons, funny incidents on outings or at other times....

The deadline for articles is 30th September 2001, but if you have any ideas NOW, either for the Journal or for excursions, please let us have them as soon as inspiration strikes.